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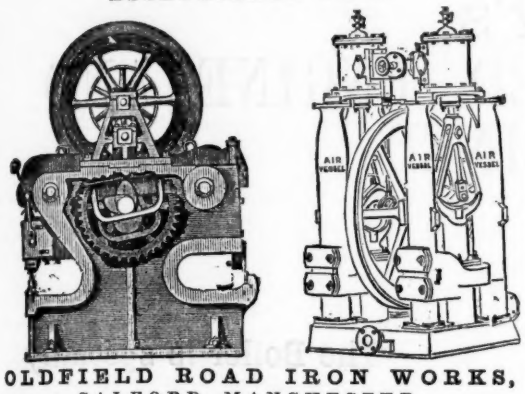

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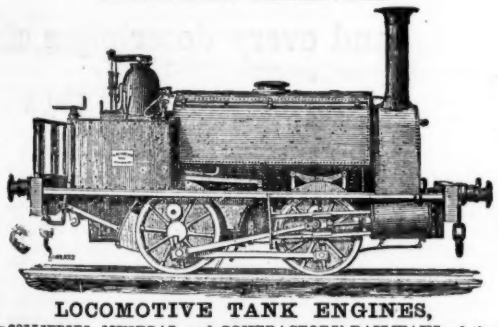

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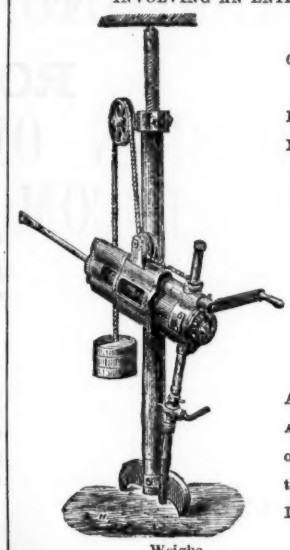

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MAY BE USED WITHOUT ANY STAND.

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	Weighs	Bores	On tripod.	On heading stand.
No. 1.....	65 lbs.....	1½ holes.....	£60	£76
No. 2.....	80 „	2 „	66	80
No. 3.....	105 „	3½ „	88	104

HEADING STAND weighs 1 cwt.

No. 2 DRILL on HEADING STAND (2" holes) ...	£76
No. 1 AIR COMPRESSOR and ENGINE	85
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Total.....	£184

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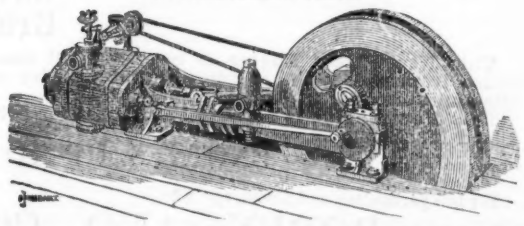

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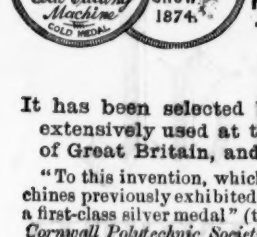
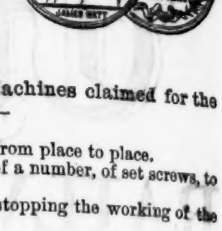


THE "KAINOTOMON" ROCK DRILL,

The SIMPLEST, CHEAPEST, and BEST Machine in the World for SINKING, MINING, and QUARRYING,



It has been selected by the Admiralty for their works, and is extensively used at the principal Mines, Collieries, and Quarries of Great Britain, and the Continent of Europe.

"To this invention, which appears to possess several advantages over the machines previously exhibited at Falmouth, the Judges are *unanimous* in awarding a first-class silver medal" (the highest award).—*Report of the Judges at the Royal Cornwall Polytechnic Society's Exhibition*, 1873.

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5.—It is not liable to derangement.
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7.—All stuffing-boxes and parts requiring adjustment are dispensed with.
8.—It is so simple in its construction that any ordinary labourer or miner can drive it, simply having to turn on the motive power and feed the drill.
9.—The rotation is compulsory, and regular.
10.—40 lbs. pressure only is required to work it.
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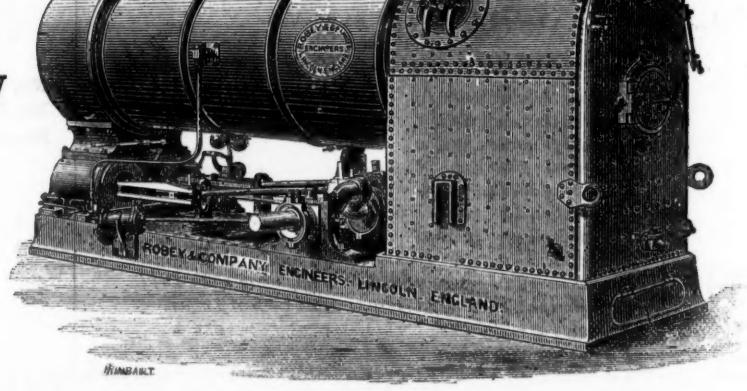

The Boiler is specially arranged to burn saw-dust and refuse wood, and every description of inferior fuel, and thus economise Coal.

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This New Patent Engine is free from all the objections that can be urged against using the old style of Semi-Portable Engine for permanent work, because it possesses the rigidity and durability of the Horizontal Engine, and at the same time retains the advantages of the Semi-Portable, in saving time and expense in fixing.

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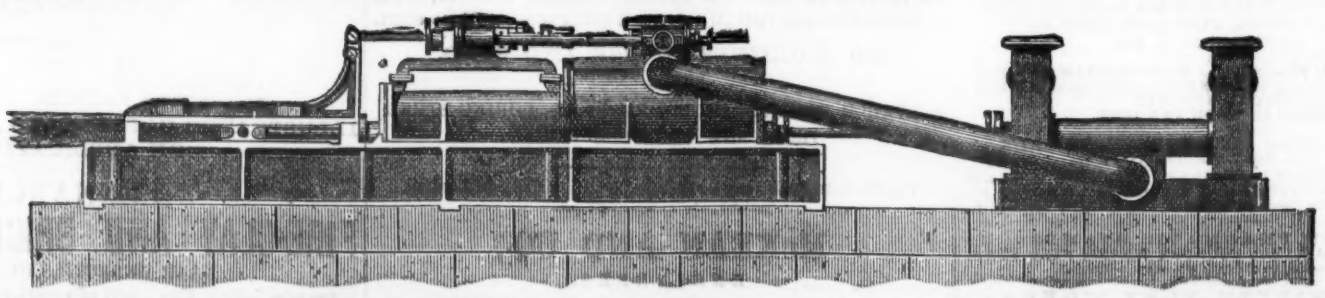

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FURTHER PARTICULARS ON APPLICATION

Original Correspondence.

ON THE ANTHRACITIC COAL OF DEMONTE, NEAR CUNEO, IN THE ITALIAN ALPS.

By the Chevalier W. P. Jervis, Conservator of the Royal Italian Industrial Museum in Turin, &c., &c.*

[Translated from the *Industriale*, of Milan, with additional information.]

§ 1.—*Introduction.*

Having been requested to study the anthracitic coal beds lately brought to light at Demonte, in the Valley of the Stura, province of Cuneo, and to give my opinion on the works already commenced in the localities named—Monfieis and Perosa—I have had occasion to visit these places several times during the course of the last two years, and of examining in detail every feature of the rugged mountain chain in order to determine the precise nature of the ground. Nor did I fail to visit the neighbouring communes, deeming it necessary, in order to study the relations of the rocks, and to avoid those errors of judgment into which it is so easy to fall when observations are limited to a field too small to permit of generalising. Although the rocks in many parts of the valley of the Stura, especially on the left side, are extremely bare of vegetation, the geology of these mountains is by no means an easy subject for examination, and it would be idle to propose to make out anything of the structure of the chain during an excursion of only a few days, the more so as there are numerous eminences which require four or five hours of the most fatiguing walk along rugged foot-paths in order to reach the summit. However, by dint of time and labour, having visited every spot, I think that I have arrived at a clear notion of these mountains, and particularly of the bearings of the coal beds to the strata immediately above and below them.

§ 2.—*Geographical position of the town of Demonte.*

The town of Demonte forms the centre of a political division sending a deputy to the Parliament at Rome, and is situated in one of the delightful Alpine valleys crowned by lofty mountains on either side, and traversed by the torrent Stura. It lies at the distance of 16 miles from the city of Cuneo, capital of the province of the same name, and with which it communicates by means of an excellent national road following the Stura with a gentle gradient, and passing the town of San Dalmazzo. The township of Demonte covers an area of about 32,000 acres, and has a population of 6200 inhabitants, of whom about one-third live in the town itself, which is built on the rising ground on the left bank of the Stura, and the rest in 12 little hamlets dotted over the Alpine slopes. There is a weekly market, and an annual fair of cows and pigs which attracts a very great number of purchasers from all the towns of Piedmont. The revenue of the town is principally derived from the grazing of cattle in summer, and the making of cheese. Silkworm rearing is also carried on largely. In the adjoining commune of Valdieri are the celebrated hunting grounds of the King of Italy, abounding with chamois, pheasants, and other game. There is also a large bathing establishment annexed to the sulphureous thermal springs of Valdieri, which is much frequented in summer time; a similar establishment lies above Ninadio, where there are other mineral waters of the same nature as those of Valdieri. Both at Vinadio and Valdieri there are lead mines which possess excellent and rich lodes, and in the last-named place magnificent white marble is found in large quantities, of the same nature and belonging to the same geological formation as that of Carrara, though unworked from want of capital. The coal mines of Demonte lie at the distance of 5 or 6 miles from the town, on the slope of the Alps.

At the present time the nearest railway station is that of Cuneo, whence the distances to the principal industrial centres of the neighbourhood are as follows—Turin, 55 miles; Alexandria, 88; Savona, 100; Genoa, 133. The work of piercing the Col di Tenda is, however, proceeding with rapidity, so that in a short time we may look forward to the prospect of having the railway prolonged from Cuneo to Nice, or some point on the Mediterranean intermediate between that city and Genoa. As soon as that is the case there will be a railway station at Borgo San Dalmazzo, only 10½ miles from Demonte.

§ 3.—*The anthracitic coal of Demonte is highly worth while being worked; it is true coal of the carboniferous formation, and was originally bituminous coal, such as is found in England.*

I have now no hesitation to pronounce boldly that the anthracitic coal of Demonte exists in considerable quantity, forming a zone of a certain breadth, which is in every respect worth being worked; and, in the second place, that this coal is by no means to be attributed, as has been hitherto maintained, to rocks belonging to the Mesozoic period, contemporaneous with the oolitic group of England and France, in which case it would be nothing more nor less than a metamorphosed lignite, but that it belongs to the Palæozoic period, and is consequently far more ancient. I have, indeed, no doubt that it constitutes the base of the carboniferous formation, such as is found in Northern Europe, so that originally it was ordinary bituminous coal, like that of England, Belgium, Germany, &c., though, having been subsequently subjected to very slow and imperceptible, but powerful, chemical agencies, in common with every part of the majestic chain of the Alps, it has now lost almost all the volatile components, while the fixed carbon and the ashes remain behind in a concentrated form, so as to constitute a dry anthracite coal, producing in the process of combustion great heat, but giving out little flame, chiefly oxide of carbon, a powerful reducing agent so valuable for metallurgical operations. It is superfluous to dilate upon the importance of the distinction between lignites and true coal of the carboniferous formation, for while the former may exist, and be worked with the greatest advantage in a limited area, true coal alone is known to cover vast fields, and form large basins, such as would be quite within the range of possibility in the present case.

§ 4.—*Method adopted in the geological examination of the ground in order to determine the nature and value of the coal beds.*

In order to render the account of the coal beds of Demonte as simple as possible to those who have not visited the neighbourhood, and even to those who have never been in Italy, and confining myself to points which have practical objects, I propose examining with some detail three groups of rocks alone—that in which the coal occurs, and those lying below and above the first named. To the former I will, however, direct attention principally, so as to show the precise nature of the beds of mineral fuel, their thickness, direction, extent, &c., as well as the connection between the beds found in spots placed at a considerable distance apart, separated by very lofty mountains, covered with wood, or a rich carpet of flowers of every colour, forming in the early summer the beautiful Alpine flora, and later in the season when the grass has been cut the pasture ground for cows, and where it is evident that it would be impossible without laying bare the ground to have any notion of the rocks below.

§ 5.—*Groups of rocks lying under the coal formation.*

Prepalæozoic Green Rocks.—At the northern extremity of the commune of Demonte is a lofty eminence, which crowns the gorge of Monfieis, and the summit of which towers majestically with almost vertical walls forming immense precipices, at the foot of which, on the side of Monfieis, may be seen in wild confusion a wide field of blocks of stone of every size, some of them many yards in diameter, detached by the agency of water and ice penetrating into imperceptible fissures, and then hurled down in the spring time from the eagle's retreat above. This height is called the Monte Pergo, and is formed chiefly of serpentine and euphotide, the stratification of which is clearly visible in numerous places. The dip of the beds is from 75° to 80° towards S.W., the strike from N.W. to S.E. magnetic. The greater part of these bold rocks lies in the commune of San Pietro di Monterosso, which belongs to the adjacent valley of the Grana*. Along the same line, at the distance of ¾ mile towards S.E., rises the Beccas and Mezzodi, consisting likewise of serpentine, euphotide, and diorite. This embraces the highest part of the valley of Perosa, and thence continues into the commune of Valloriate. The strata are almost vertical; their strike, as usual, is from N.W. to S.E. All these rocks of which I have spoken are the most ancient of those which exist in the district to be described, and lie at the base of those I am about to specify.

Schists.—On the south-westerly slopes of the mountain these rocks are covered with schists of every degree of hardness, of various undecided colours, and dipping in various directions, though their strike is invariably the same, from N.W. towards S.E. Frequently it happens that the strata placed nearest to the serpentine and euphotide are so extremely metamorphosed on account of their great antiquity and the prolonged and powerful influence of chemical agencies, operating on heterogeneous materials not possessing any mutual affinity as to have completely lost their schistose structure, becoming compact and very hard, so much so that it is with the greatest difficulty that they can be recognised to have been derived from stratified schists. Elsewhere—for instance at the Monte Favot, where the calcareous element predominates—they present themselves in the form of very thin beds of calcareous schist. The same observation applies to the northern slope of the Beccas di Mezzodi, where the calcareous schists are quarried under the designation of *lose*, in large slabs for roofing, instead of slate. To these schists succeed others, more perfectly foliated, but generally very talcose, and containing here and there pieces of Saussurite felspar. It happens in certain cases that the talc predominates to such an extent as to be almost the only constituent of the rock, which becomes saponaceous to the touch, and is of a dirty white colour. One of the spots where talc is most abundant is in the level of the mine of Monfieis, driven under the workmen's houses on the left of the gully of the Gran Gorgia; it is there so abundant that it might be worth working as a refractory clay for the manufacture of certain kinds of pottery.

The total thickness of the talcose schists would not be easy to determine without further examination on the spot since the inclination of the beds is very variable, but it may be put down in round numbers at about 1600 ft. Some months ago, during my last visit to this place, I was fortunate enough to trace clearly the line of separation between the talcose schists and the superincumbent carboniferous schists, for along the bed and banks of the little gully of the Gran Gorgia, not far from its upper extremity, the discordant stratification of the two series of strata is very apparent, and while the carboniferous schists are more or less regular, and but little subject to contortions, the talcose schists present remarkable fine plications like the salient and re-entering angles in the plan of a fortification, and these are visible to the very point of contact of the two formations. This circumstance proved clearly that the force which produced such great derangement in the rock must have manifested itself a considerable time previous to the deposition of the schists lying above, in which no trace of such action is visible. The inference, therefore, is that these latter belong to a younger geological formation, which I will endeavour to establish.

§ 6.—*Group of Carboniferous Rocks.*

Argillaceous and Calcareous Schists.—The schists of the upper series just alluded to are less talcose and contain less magnesian minerals than the lower ones, and even are sensibly free from these elements, whence they are scarcely if at all soapy to the touch. They vary in colour through all the gradations of lead-grey, brownish, brown, purple-brown, &c. In certain places they have a silky gloss, owing to microscopical striæ. In some instances the cleavage is very distinct, while elsewhere the rock is harder, and contains little nodules of whitish or yellowish, somewhat fatty, quartz, the whole pervaded by a ferruginous cement. The beds of anthracitic coal are exclusively found in these strata. In order to determine the precise geological horizon of the carboniferous schists, which is a matter of great practical importance for the success of mining enterprise in this neighbourhood, I may mention that similar rocks exist in the Eastern Alps, in the Valle of the Gail, in the Austrian province of Carinthia, and, under the name of *Gailthaler Schiefer*, are acknowledged by all Austrian geologists to belong to the carboniferous formation. These schists extend eastward across Carniola, and are very well marked at Troiana, near Jager; the pass onwards from that point to the valley of the Sann, in Styria, south of Cilly. In many places they contain fossil ferns characteristic of the carboniferous formation, among others *Lepidodendron*. Besides the shales there are also thick beds of sandstone, and both these rocks in very many places contain anthracitic coal in thin beds. In a visit to this part of Austria, made last spring, I was remarkably struck with the resemblance between the lead-grey striated shales of Troiana and the valley of the Sann and those of Demonte, and my astonishment was still greater in seeing the analogy between the physical and chemical properties and the geological features of the anthracitic coal of Demonte, and that lately opened up by a new mine near Laibach, in Carniola, of which I brought back some samples which cannot be distinguished from those of Demonte. Two beds of anthracitic coal exist at Turrach, above Murau, in Upper Styria, one of which is workable, and where a mine was opened in 1854 for supplying fuel to the blast-furnaces of the Turrach ironworks. From all these considerations, and others of a purely scientific kind, which I need not here refer to, I am brought to the conclusion that the carboniferous schists of Demonte are identical with the Gailthaler Schiefer, now for the first time discovered in the Western Alps, and on Italian territory, consequently the coal of Demonte really belongs to the carboniferous formation.

In some places the carboniferous schists of Demonte dip to the S.W., further on they are vertical, and at a greater distance off are turned in the opposite direction towards N.E., but the strike is always constant from N.W. towards S.E. The thickness may be taken in round numbers at 1600 feet.

§ 7.—*Group of Rocks above the Carboniferous Formation.*

Snow-white Quartz.—On the left bank of the Stura the commune of Demonte is crossed by an imposing mass of snow-white quartz, generally quite pure, either compact, or in numerous very thin beds, or granular, but altogether evidencing a distinct stratification at the surface. Having taken careful measurements of the thickness of these phenominal beds of beautiful white quartz, I found it to range between 215 and 230 feet. They may be followed for many miles in length, and certainly must proceed still further where they properly traced. The strike is precisely the same as that of all the rocks hitherto examined, that is from N.W. to S.E. They form a remarkable zone, cutting the mountain in a right line, as I was able to ascertain with accurate instrumental measurements, forming eminences easily recognised, as they project considerably above the mountains on either side on the successive crests.

Following regularly from S.W. towards N.E., the following are the chief localities in relation to the present subject in which the quartz is seen. The first summit of which I shall speak is the Monte Moro, where the quartz forms a somewhat roof-shaped hill, with steep slopes, superimposed on the bulk of the mountain, which it crosses almost at right angles. It is easily recognised at a long distance from the white streak visible on the talus of the mountain, and which is formed of the quartz detritus fallen down towards the torrent. Hence the quartz has been considerably denuded, and crosses the valley of Pra Bruno, where it is often hidden from view by vegetation, but it rises to the top of the Colle dell'Angiolino, on the opposite side. Here follows the steep ravine of Perosa, which it crosses, and cannot be seen at the surface; on the opposite side of the ravine, near the Monte Mattio, rises the Magola, a little hill projecting sharply above the crest of the ridge, perfectly bare, and of a dazzling white appearance; it is nothing but the quartz. Proceeding onwards from the Magola, next follows the ravine of Monfieis. On the left bank of the torrent of that name, about half its length, may be observed a picturesque rock, partly fallen down towards the water, the rest with precipitous walls, and which is the same quartz bed. Passing the little rivulet of Monfieis, in the midst of the large blocks of stone brought down by the action of ice, snow and water from the Pergo, a few steps beyond there is a narrow ridge in the form of a horse's back, which descends from the mountain above Pra Collet, and terminates at the torrent. The whole of this eminence consists of quartz. Finally, on reaching the summit of the mountain of Pra Collet, towards the north at one's foot, lies the deep ravine of San Manorzio, entirely covered with pasture ground, so that the underlying rock cannot be seen, but on the opposite mountain, on the right bank, the quartz re-appears, though it would be unattended with practical results to trace it any further, since it is beyond the territory in which the coal mines are situated.

Palæozoic Limestone.—Above the quartz follows an immense mass of limestone rocks, alternating in some points with insignificant beds of argillaceous and especially calcareous schists, from a few inches to several yards in thickness, but which I desire particularly to impress on the reader as having nothing whatever in common with the schists in which the coal beds are found, being of a different geological formation, whence no research for coal should by any means be made there. The thickness of the limestone may be 3300 feet. Beginning at the commune of Valloriata, it constitutes the southern part of Monte Moro, the eminence towering above the village of Perosa, the Monte Mattio and the Monte Sapea, situated at the entrance of the gorge of Monfieis into the little valley of the Arma, the former on the left side the latter on the right. All these heights are visible to the observer as he follows the national road between Cuneo and Demonte.

(To be continued in next week's Journal.)

* Author of the "Mineral Resources of Central Italy, including a description of the Mines and Marble Quarries," &c. London: Stanford, price 5s. "I Tesori sotterranei dell'Italia, Descrizione topografica di tutta le localita rel Regno d'Italia dove rinvengonosi minerali, aduso dei Capitalisti e di tutti i Cultori della Scienza mineralogitha," ecc. Three vols 8vo, with original illustrations, analyses of ores, &c., Turin. Price in England, 1*l.* 19*s.* 6*d.*, Vols. I. and II. are already issued, price 1*l.* 4*s.* 6*d.* in England, post free, on application, accompanied by International Post Office Order. Vol. III. in preparation.

* Serpentine and allied rocks, such as euphotide, have been hitherto by general consent considered as eruptive rocks, and only now the truth is beginning to dawn on the matter. Gerlach in Switzerland, Gastaldi in Italy, have shown that they are really stratified deposits of the same age as the crystalline white marbles, and belonging to the base of the sedimentary series long before the Silurian formation. Those who study the Alps impartially, especially with reference to the mineral lodes, will be compelled to coincide with this view of the origin of rocks still generally attributed by most Italian and other geologists to eruptions which took place in the tertiary period.

MINING IN INDIA.

Sir,—Mining matters in India have made but little progress during the last year, in consequence of the grasping disposition of Government, to which Lord Northbrook has proved no exception, laying forcible possession on the discoveries of everyone whether they have a legal claim or not. Lord Mayo inaugurated a new policy in India by promising favourable leases to the discoverers of all mines. This Lord Northbrook and the Lieutenant-Governor of the Punjab have entirely repudiated and upset, taking forcible possession of mines that had been leased in Lord Mayo's time for 20 years. Fortunately, after 12 months' expostulation, which was of no avail, with the Governor-General, the Secretary of State for India, Lord Salisbury, has interfered, and although he cannot, or will not, insist upon the Government of India compensating those whom he himself records as having been "most shamefully treated," he has ordered the restitution of the mines to the original discoverers, reversing the anomaly with Naboth, who, though Ahab and Jezebel both came to the worst, we do not hear that his vineyard was ever restored to his heirs.

People in England have little idea of the great similarity existing between the despotism of Ahab and the present Indian Government. It is supposed to be indigenous to the soil, or strangely inherited from the Great Mogul, whose ideas of *meum* and *tuum* were similar to those of the man who defined his wife's property as "what's yours is mine, and what's mine's my own."

The valuable mines in the Himalayas at Sabathoo have been closed nearly a year, and all those higher up for more than 12 months, except at Shigi, which was worked last autumn with surprising results, seven men taking out 15 tons per month. Five lodes have been discovered there—some pure stibnite, 10 to 15 ft. wide, and others silver-lead, yielding 90 ozs. silver to the ton. A lease has been granted of the iron mines at Jubbulpore, which yield the finest steel in the world, worth 90*s.* per cwt.

We understand the new leases to the mines in the Himalayas are only granted on the conditions that the lessee shall guarantee the local Government against any civil action for losses or damages that he has endured during the last 13 months by the act of the Punjab Government. This is like knocking a man down, robbing him, and then standing over him till he denies having been even offended.

Delhi, India, July 3. ——— Correspondent.

THE COAL BEDS OF EAST CANYON AND RUSH VALLEY—OPHIR DISTRICT, UTAH.

Sir,—The formation or country rock of this district along the mouth of Dry Canyon, East Canyon, Silverado, and South of Silverado, is limestone. This limestone appears everywhere, forming strata, and overlying the Lower Silurian. The formation is a series of strata, one above the other, the plane of which dips with the slope of the hills westward to the valley. The course of these strata is many times interrupted and broken through the great upheaval. Through this series breaks Dry Canyon, East Canyon, and Silverado. As three large channels formed through the great water-courses, upheavals, and curvatures, leaving the broken parts on either side of the channel, facing each other, to show clearly the relative position which they once occupied, everyone is immediately clearly convinced of the great upheaval which tore asunder the facing parts, for if the same thing appears on both sides of every canyon, the strata boldly cropping out directly opposite each other, and on the same place, we see that if these hills were pressed back in their former position to a level with the valley all their broken and dislocated lines join exactly together. It will then appear clearly that prior to the mighty upheaval the country, as a horizontal plane, was covered by a mass of over 1500 ft. of limestone, and when the fierce and terrible subterranean powers worked upwards they broke and upheaved the whole mass of limestone, and formed mountains, hills, hollows, and canyons, like they appear at present. The limestone which appears on the east side of Rush Valley, along the mouths of Dry Canyon, East Canyon, and Silverado, is materially different from the limestone which appears more at the head of the canyon, or more eastwards—it is a more compact homogeneous grey limestone, crossed all over with calspathic veins, and changes gradually to marl. I found in this limestone trilobites and a *Productas longispinus*. This limestone is positively formed by marine influence. Under this limestone appears the slaty schist; 80 or 100 ft. below the slaty schist the New Red Sandstone; below this the argillaceous shale; then a thin streak of fire-clay; below this is the coal bed.

This coal bed belongs to the lignithic formation. It is my belief that this coal will be found good anthracite. The anthracite character has been imparted to the lignite by dykes of Plutonic material, many of which occur east of the coal croppings. The first dyke occurs about 200 ft. east of the coal croppings. This coal is only opened on one place by an incline about 80 ft. long, and by a shaft 90 ft. deep. This coal bed was first discovered by a Mormon farmer eight years ago. Some ignorant miners made him believe the same worthless, and by all the evidence he had by raising this coal with several other farmers, for blacksmithing and heating, he believed these miners more than his senses. Through exposure to the weather for eight years the coal has, of course, deteriorated in its effects. It is very probable that the eruptive rock has overflowed and broken through the sandstone, and that large tracts probably underlay, and, being anthracite, the coal has a specific gravity of 1·45, 1·80; in burning it gives a short blue flame under intense heat. The outcrops are very much broken, and the coal is for a length inside of over 50 ft. greatly mixed with clay and shale. The bed has a thickness of over 20 feet. No other developments of any material value have been made in this coal field, which contains several thousand acres, beyond proving the existence of coal in a north and south line of over four miles. As the formation on the west side of Rush Valley is the same as on the east side, with this difference that the strata dip eastwards, it is my opinion that we have here a coal basin, whose deepest point is near or in the centre of Rush Valley. The strata dip at an angle of from 25° to 35°. Underlying the coal is Old Red Sandstone, silicious shale, and dark argillaceous shale, alternating with grey sandstone.

I found several species of calamites from the sandstone. The sandstone is hard, coarse grained, and heavy bedded. They form in

places a well-defined ridge, running in an almost direct north-east and south-west line. The great upheaval has brought to the surface east of the coal crops Silurian rock which belongs fully 4000 ft. below, so that the vertical displacements must be over 6000 feet. The Silurian rock is limestone metamorphosed; east of the coal crops the ridge is not well defined, as the conglomeratic pebbles and red clay form here greatly the surface.

The slopes of the hills in which the coal crops appear are thickly covered with yellow and red pine and cedar timber. All places are of easy access by wagon roads, and the Utah Western Railroad is rapidly approaching completion. The soil is light, and not suitable for agricultural purposes, except here and there a very limited patch in the creek bottoms. The climate is exceedingly healthy at every season; the snow falls in the winter very light. The mines at the head of the canyons are shipping ore throughout the year daily.

Salt Lake City, April 5. ——— W. BREDEMEYER.

MINING IN SOUTH AUSTRALIA.

SIR,—I had intended by this mail to have sent you an account of the deposit of native copper at Sliding Rock Mine, but owing to a pressure of business am compelled to defer it for another month. In the present state of the tin market anything relating to the Australian deposits must be of interest in England; I, therefore, enclose Mr. Commissioner Hume's report on the "Queensland Tin Field," from which (if it has not already reached you) you may think it worth while to publish extracts. It is certainly the clearest and best description that I have yet seen.

Mining in South Australia is quiet, the most excitement being in connection with the Lady Alice, near Gawler, this being, I believe, the first dividend-paying gold mine in the colony. It is a quartz reef that contains the gold, interspersed also throughout with a little high quality copper, over 40 per cent. CHILLEY.

Adelaide, South Australia, May 17.

[We are obliged to our Correspondent for sending Mr. Hume's report on the "Queensland Tin Field," but we had already been favoured with a copy, and published it in the Supplement to the Journal of May 29.]

MINING IN SOUTH AUSTRALIA—SLIDING ROCK MINE.

SIR,—Sliding Rock Mine (which lies 35 miles north of Blinman, or about 380 miles north from Adelaide), owes its name to a high shelving rock of quartzose sandstone that rises perpendicularly from the bed of a creek about 300 yards to the north of the mine. It is situated on the northern slope, and near the base of a low hill, composed of a hard, greyish trap rock, through which small strings and veins of hematite iron are interspersed. Just about the engine-shaft two different strata of rock cross each other, at nearly right angles, and, no doubt, this is one of the causes of the productiveness of the lode, which is unique in its character and composition. The ore for the first 15 fms. in depth is a mixture of carbonates, with chalcocite, red oxide, and native copper. Underneath the 15 fm. level the copper is all native, and is evidently caused by precipitation, strong coppery water having come in contact with the veins and loose stones of hematite iron. This native copper is imbedded in small grains and lumps in a regular clay lode, that runs north and south, and dips east, towards and under the hard rocky hill, at an angle varying from 45° to 75°, but which will average about 55°. The hanging wall is clean and smooth, and is composed of a hard black ferruginous rock, mixed with flookan, from which issues all the water yet discovered in the mine—140 gallons per minute. No true footwall has yet been found. The lode, or deposit, has been worked for nearly 40 fms. in length, the payable part being from 3 ft. to 9 ft. in width; the clay is in thin layers, with in some places traces of vegetable matter lying between, looking very much like the mud and sediment in the bottom of an old pond would look if one side of the pond was raised to the extent of half its width, as the layers, instead of being flat, dip in the same direction as the lode, and in some parts of the mine are nearly vertical. In some parts of the lode, stones of red hematite iron are found in the soft clay, and around these the native copper is always thicker and in larger lumps. The whole of the clay as sent to surface will probably average from 1½ to 2 per cent. for copper; but after it has been puddled and jigged, &c., the ore is found to be of high percentage, the parcels rarely assaying less than 60, and some of the best lots have been sold for over 80 per cent. The engine-shaft is sunk to the 30, and nearly all the ground is stoped away to that depth. A winze sunk in the bottom of this level proves that rich payable clay continues below.

The mine is worked by an Adelaide Company, who have paid several dividends, which in a mining point of view were not fairly earned, as in order to do so all exploratory points were stopped, and it has since been found necessary to raise more capital than had previously been paid in dividends in order to continue sinking the shaft, and to erect more powerful machinery, which is now being put up, and instead of being permanent will again want replacing when the mine gets a little deeper. The mine is, however, a good one, and if laid out properly ought to pay well. Anxious anticipations are indulged with reference to the continued sinking of the shaft, as there is a theory abroad that, owing to the softness of the clay, especially when under water, the specific gravity of the copper would cause the heaviest and richest grains to sink to a lower level, and that, therefore, at a greater depth immense riches may be expected.—*Adelaide, South Australia, June* 6. CHILLEY.

MINING IN QUEENSLAND.

SIR,—The quantities of tin forwarded from the Warwick Railway Terminus during the month of April was—

	Tons.	c.	qr.	lbs.
Stream tin	382	6	1	1
Ingots	3	3	2	11
Total	385	9	3	12

Showing a decrease of 15 tons on the previous month, and a decrease of 54 tons on April, 1874. On May 2 we received intimation by cablegram of a further fall of 2*l.* in the tin standard in London; this last fall has not affected this market further than lowering quotations here a similar amount, as there has been no transactions to report in ingot tin since the previous fall referred to in my last; but the late fall has had an immediate effect on the retail purchasers of stream tin on the mines, the price falling to 3*l.*, 3½*d.*, and unless from constant customers, storekeepers do not care to buy even at those figures. It seems to be the general feeling here that below this price we cannot supply; my own opinion is the reverse of this. I do not think we have yet reached the limits at which our miners can supply without loss. The present fall will, of course, affect all, but only about 10 per cent. will be stopped by it, if so many. It will, however, tell heavily on the large exporters who bought in October last at 86*l.* to 90*l.*

In copper I have nothing new to report.

In gold, the northern fields—Ravenswood, Charteris Towers, and the Palmer—are all busy and highly spoken of; there are no new discoveries to report at the Palmer, but the discoverer has started with a well equipped party on a prospecting tour lately; hopes of another new field are strongly entertained. The Chinese immigration to Cooktown from Hong Kong is getting serious, about 5000 have already arrived, and they say there are 60,000 at Hong Kong ready waiting for ships or steamers to bring them. The rush from Hong Kong has been caused by a few of the lucky Chinamen returning by the Torres Straits mail steamers with their gold. The consequence of this influx of the "Heathen Chinee" in such numbers is very dangerous, as heretofore "John" has, on the Australian gold fields, been permitted to work only in abandoned or worked-out ground; but arriving in such numbers "John" must encroach on new or fresh ground; this will certainly be atonce resented by the Australian gold digger, and a "roll-up" and much bloodshed will as a matter of course follow, especially as both sides are fully armed. So convinced are the Chinese of this that they are actually practising their newly purchased "fire-irons" at targets in the evening by moonlight, so as to be able to use them with advantage. The Queensland Government are powerless to act; five regiments of soldiers could not keep the peace over such an extent of country. If the row commences John must go to the wall. RESIDENT.

Brisbane, May 18.

P.S. (May 21).—I have just received the total quantity of stream tin shipped at Grafton during the first quarter of this year, and which I estimated in my last letter at 500 tons. The actual weight was 368 tons 14 cwts. 1 qr. 12 lbs., being 130 tons less than I estimated, and reducing the actual gross yield of the quarter to 2062 tons of stream tin, so that the reduction in the yield of the first quarter of this year is much greater than I anticipated or estimated.

STANTHORPE.—A correspondent writes to the *Brisbane Telegraph*, May 26—"As the price of tin is so low, and no speculation whatever, I assure you it gives me great anxiety to know whether they will ultimately recover. Stanthorpe is miserable at the present, although there is still plenty of tin, and I have estimated that at the present moment we have 200 tons on the ground unsold, parties preferring to hold. This represents at ordinary rates 8000*l.*, which if circulated would make a great difference to our local storekeepers."

MINES AND MINING AT LAKE SUPERIOR.

SIR,—Being an old pioneer of this country, I deem it my duty, as it were, to lay before the readers of your valuable Journal, more particularly the mining capitalists, a few remarks on our mines and mining. Twenty-five years ago mining was in its infancy, and a large field of hard labour, connected with almost an endless sum of money, was necessary to reach the mines back in the woods—to say nothing of the heavy draw upon the stockholders to open the mines, and bringing them into the condition for the production of copper. But as there were excellent prospects, even at surface, in what was called Indian diggings, or ancient pits, masses of almost pure copper from the smallest size up to 15 tons, the greatest excitement appeared among men of all classes, and a rush was made; a great demand for men sprang up to carry out the necessary work; no stint of money, but time was all important, in order that great results might be obtained. Although several of the mines came out great prizes, and many more would have done so under good local management, this excitement to a great extent died away. Some mines shut down, whilst some others curtailed expenses. Owing to this many of the capitalists became exhausted, whilst others were badly drained and discouraged. This state of affairs continued for years; the mines suffered, and but little progress was made. In addition to this state of things down went our best mines—supposed to have failed to contain their usual amount of copper—the Minesota, and, I may say, the National, the Cliff, the South Pewabic, Huron, Pewabic, and Franklin Mines.

The Cliff Mine to your readers needs no comment upon its former riches, as every person knows that it was a rich dividend-paying mine for many years; but, through the penny wise and pound foolish management, they dwindled down from their large dividends, and through fear of an assessment coming on they stopped the mine, but not everyone thought the Cliff was exhausted. A new party from the enterprising City of Boston, to whom the principal credit belongs for mining in the United States took hold, I am told, in the sum of $100,000, drained the mine, and with good sound mining judgment, coupled with economy, they at once brought the concern into a profitable condition again, with a prospect that will justify that expectation for many years to come.

During the time the South Pewabic, now the Atlantic, first worked its management sunk the company in ruin—many of its stockholders have not nor never will recover. They seemed to have such unbounded confidence in the manager that they allowed themselves almost to be drained to death; but, as I have remarked concerning the Cliff Mine, not everyone thinking the mine was worthless, another party took hold, and by a judicious course they have the concern in a good sound profitable condition.

We will now glance at the Pewabic and Franklin Mines, of which no doubt you have been posted to some extent from their infancy. I may say nearly if not quite 20 years. The lodes have been rich from surface, and the mines should have declared large regular dividends up to the present. True, in an early day they did declare dividends, but have failed to do so for many years past. I may state, however, that some of this falling back is attributable to the company. They seemed to have had a system of changing their local agency every six or twelve months, and the general rule was every new agent had and introduced a new plan of work, and every new plan fell heavily upon the stockholders. At last they found themselves going to ground; they leased the mines upon tribute, but not having an agent there to protect their interest the tributers had liberty to treat the mines as they thought proper, and the result was such as you can better imagine than I can describe. Allow me, however, to remark that the tribute arrangement lasted four years, and in that time it is said the tributers cleared over $200,000, but left the mines in a ruinous condition both at surface and underground. Had the tributers exercised economy and the least mining judgment they would have doubled their fortunes. A new treasurer stepped into office with some change in the board, and a determination on their part was to see what the mines were made of. At first they were fortunate in securing the services of a very able local manager, who has ever since been hard at work putting matters to rights, not forgetting the product of the mines, as there were but little funds in the treasury, and the name of an assessment was out of question, as the stockholders had given up all hopes of any more good being done; but, to the surprise of everyone here, the mines were put into as good shape as any man could do in the time, and are now in a sound and profitable condition. A MINER.

Portage Lake, Houghton County, Michigan, July 18.

THE FLAGSTAFF MINING COMPANY.

Sir,—I have just read your report of the meeting of the Flagstaff Silver Mining Company, which was held on July 30, and I have come to the conclusion that it is useless to apply to any Court of the State of Utah for a receiver to be appointed, as under the circumstances, Mr. Davis being a mortgagee in possession, the Court would have no power to appoint a receiver. Mr. Davis may work the mine in any manner he thinks proper until he is paid; and there is no doubt that he will endeavour to pay himself, without considering whether he is working the mine in a proper manner, so that after he is paid it would be found that the mine had really been worked in a miner-like manner—that is to say, while the present ore-bearing ground had been stoped away, other ground had been laid open on the course of the lodes preparatory to taking away the ore in due course. I have no doubt whatever but that "the eyes of the mine" will be picked out while Mr. Davis is working it. His object will be to get all the ore he can at the least cost, so that when he has paid himself the property will be delivered to the company in such a condition as will require a heavy outlay to place it in a proper state for future continuous profitable working.

If the company who are in the position of mortgagors cannot raise the money to pay off Mr. Davis, who is the mortgagor, all they can do is to wait patiently until such time as Mr. Davis has paid himself, and in the meantime carefully to watch his dealings with the mine, and require him to produce from time to time proper accounts and vouchers as to ore raised and sold, &c. It may be, and I think it very probable that it is the case, that Mr. Davis has another object in view beyond that of holding the mine until he has paid himself—which is so to disgust the shareholders, to tire them out, and temporarily so to damage the appearance of the mine that it may some day or other come into his hands as the absolute owner. As to not being able to obtain the services of a trustworthy agent in this country who would go out to look after the interests of the shareholders only—this is nonsense; and I am surprised to read the remarks of some of the shareholders at the meeting on this question. Better trust to an agent sent from this country than to one selected in the United States. The shareholders had better think twice on the subject before they begin to fight with Mr. Davis in the United States law courts; and as to disputed accounts, these should be referred to arbitration if Mr. Davis will consent. As to his refusing to be bound by the award of the arbitrators, there is nothing to fear on this ground, as there would be but little difficulty to compel him to comply with the award if given against him. There is no doubt of one thing, and that is, the whole affair is in a mess. Yet it may be made worse than it is if injudicious steps are taken. I have no doubt at all but the mine is a very valuable one, and will at some time or other pay very large profits to those who may hereafter hold shares in it. Is Mr. Patrick, who I take to be what we in Cornwall call the captain of the mine, appointed by the company or by Mr. Davis?

NORTH CORNWALL.

CARDIFF AND SWANSEA SMOKELESS STEAM COAL COMPANY.

SIR,—Amid the rowdyism that prevailed at the meeting on Friday it is not a matter of surprise that your report is inaccurate in some particulars. Allow me, therefore, to make clear certain points for the information of the public and the absent shareholders.

The commencement of the disputes, which were virtually ended on Friday, was certain charges of suppression of correspondence made by Colonel Shakespear, as Chairman of the company, against Mr. John Corry, a managing director, which it was alleged had involved the company in an enormous outlay which ought to have been paid by Messrs. Corry Brothers, of Cardiff. Falsification of accounts at the Pentre Colliery, and other minor charges, were also alleged. A committee of investigation was appointed, and they advised a compromise of all disputes, the vendors agreeing to make their shares deferred until 7 per cent. is paid to the public shareholders, and a considerable proportion of the debentures which they hold are to be converted into shares. Different opinions are entertained as to the sufficiency of this compromise, some of the shareholders still thinking that the vendors ought to have been called upon to make further concessions. At the special meeting on Friday the compromise was, however, agreed to.

At the ordinary general meeting which followed the special meeting the great question was the election of directors. A committee, of which I was Chairman, appealed to the shareholders for proxies to re-elect Col. Shakespear. Mr. John Corry also issued a circular asking for proxies, and Mr. Coates and Mr. Mosley did the same. The result was as follows:—Proxy votes for Col. Shakespear, 4943; proxy votes for Coats and Mosley, 1405; proxy votes for John Corry, 476. The above figures speak for themselves, and need no comment from me. They prove in the most conclusive manner that Colonel Shakespear has the confidence of an enormous majority of the shareholders. It is but right that I should add that Mr. Yeo resigned before the meeting, and, therefore, did not seek proxies from the shareholders. If he had chosen to remain on the board Col. Shakespear's friends would not have objected.

As the promoter of the company, I felt from the commencement of the disputes that it was my bounden duty to support the Chairman in his endeavours to obtain justice for the shareholders, and it is my intention to follow this rule in regard to every company that I have brought out. If I consulted my own comfort and pocket I should act otherwise; but if one has been the means of inducing the public to invest in an undertaking it is very shabby and cowardly conduct, and at least morally dishonest, to run away when a period of difficulty arrives. In conclusion, allow me to congratulate the Cardiff and Swansea shareholders in having materially improved the position and prospects of their company by their steadfast support of the Chairman, and I shall be disappointed if their reward will not be a respectable dividend before long.

Newport, July 31. ——— H. RUSSELL EVANS.

INTERCOMMUNICATION IN RAILWAY CARRIAGES.

SIR,—As much is just now being said about the necessity of establishing a more ready means of intercommunication in railway trains, I think it especially desirable to urge upon those who propose to take any active steps in the matter the necessity of considering what systems are succesessfully in use in other countries for accomplishing that object. It would be difficult to find in any country in the world such execrably bad carriages as those in use on the railways in England, and certainly there could nowhere be found such mischievous and destructive passengers as the English, no matter what be the class of society to which they belong. The same spirit of mischief which necessitated the closing of the Pagoda in Kew Gardens, because visitors persisted in cutting their names and initials on the interior woodwork to such an extent that a few years similar destruction would have jeopardised the stability of the whole structure, has produced evidence of damage in every railway carriage in the kingdom which has been in use for more than a few months—straps are cut, windows are scratched, though many of the diamonds (?) used for this species of mischief are such vile imitations of the genuine that nought but the wearer's ignorance of gems would permit them to be displayed in public; the numbers and descriptions of the carriages are defaced, and the cushions are soiled and filthy through the idle and porcine habits of the riders. This state of things is observable in first, second, and third class, and it is a lamentable truth that the passengers' filthiness and destruction is greater in the first than either of the other classes, and greater in the second than in the third; damage in third-class carriages being, indeed, almost exceptional, and the dirt is merely that which the dirty occupations of those using the carriages makes unavoidable. A bricklayer's labourer or journeyman butcher cannot be expected to go direct from his work to a railway carriage without leaving in it some little grease or dirt, yet these would damage a first-class carriage much less than the snobs and females who now ride in them, and turn up their noses if anyone less showily dressed enters. These being the facts of the case, it follows that if we would have decent carriages, and carriages which can be travelled in without the danger of one traveller being insulted by another (though insult is seldom given unless invited), the entire system must be changed.

The mere facility of signalling to the guard is useless, for even in the most urgent case—that of sudden illness—the stoppage of the train may be quite unnecessary, and it affords no protection against damage to the property of the company, which is what must be prevented if the comfort of cleanly and non-destructive passengers is to be secured. The English, as a rule, object to the American system of one class only, although its adoption would be alike advantageous to the majority of travellers and to the railway companies, since it would enable the passengers to travel at lower fares, and yet yield larger profits to the railway shareholders; the only alternative is to follow the example of the Swiss, and use carriages of the English size, but with end doors, so that the guards can promenade from one end of the train to the other, whatever may be its length. The advantages are enormous, and the objections none.

An English second-class carriage with five compartments and 10 doors (an expensive item) carries 50 passengers; a Swiss second-class of the same length, width, and weight will carry, although having a good passage through it, 48 passengers, all of whom are much more comfortably seated than in English carriages, and free from the disturbance of passengers leaving and entering. The Swiss carriages have two doors instead of 10, so that the carriage is less costly, but with these two doors they can be quite as quickly filled and emptied as an English carriage. In the English carriages five of the doors are always useless, the two Swiss doors are always available, and are larger. But this is not all, the through system enables every passenger to enter by the door nearest to him, or wherever there is no crowding; all pass almost instantly into the passages or on to the entrance platforms of the carriages, and then find their seats at their leisure, often after the train has started again. The guards afford the necessary assistance to the passengers to find seats, look at the tickets from time to time whilst the train is running to see that none are travelling beyond the point paid for, and on approaching each station collect the tickets of those intending to alight there, so that immediately on arrival they can leave the train and the railway station without hindrance or trouble. Smoking is permitted throughout the train except in the reserved compartments, which comprises a few seats at the end of each carriage shut off by a light wooden partition, so that the traveller can leave his lady companions for half an hour to smoke his halfpenny cigar, and then return to them again whilst the train is still on its journey.

In the smoking compartments every four seats has a neat porcelain ashpan for cigar cinders (as cigars cost but 3d. to 1s. per dozen no one

use pipes where there are ladies), and the seat and back cushions in the second-class carriages are far superior to those in any of the first-class carriages in England, and are scrupulously clean. All the windows can be opened or shut at discretion, and have handsome little sunblinds, which can be raised or lowered as desired. Except-ing the English present everyone talks to everyone else, and in French or German as he pleases, insult or improper language being unheard of, so that from Olten to Geneva, or Olten to Luzerne, the time passes so pleasantly that when the journey's end is reached one is sorry to leave his pleasant companions. Even the "deaf and dumb English tourists" look less unhappy than usual, and occa-sionally they may be heard whispering to each other upon such im-portant topics as the beauty of the flowers at Dagmarfellen, the cost of hotel accommodation at the place they are going to, or the best *table d'hote* at a low price; but their silent contemplation is, per-haps an advantage, for it will have afforded all who have been there an opportunity of noticing the vast superiority of the Swiss system of travelling. If the system of through communication in railway trains were introduced into England, the damage of carriage fit-tings and the soiling of cushions with filthy boots might be pre-vented, so that while the comfort of passengers would be increased their mischievous propensities might be altered to an extent which would better fit them to associate with right-thinking people, and the profits of railway shareholders would be augmented. H. D

Aug. 3.

DRAINING MINES—STEAM PUMPS.

Sir,—Now that the camp of proprietors of the Wheal Wrey, Lud-cott, and North Trelawny Mines are divided—the one seeking to have the concern wound-up, application for which is about, if not already done, to be made at the Stannaries Office, the other to start the working, although with the fact of there being but limited means, it may not be out of place to suggest a mode of draining the mines by a cheaper method than the ordinary practice of using the Cornish engines, expensive things under the best of conditions, and coupled therewith the absolute requirement of enormous quantities of heavy pitwork, which the cash at disposal of the managing body can ill afford. The pages of the *Mining Journal* frequently con-tain particulars and views of newly invented mechanism, called steam pumps, besides improved engines, such as those made by Hathorn, Davis, and Co., of Leeds, which embody strength of parts, less cost at first, great durability, great capacity to deliver large quantities of water in a continuous stream, non-requirement of heavy pit-work, take up but little space, easily worked, and other advantages too numerous to mention, but which commend themselves to all whose senses are open to conviction. The rumour that an expense of some 2000*l.* or 3000*l.* was to be indulged in by the Wheal Wrey, Ludcott, and North Trelawny authorities, at the expense of the sub-scribers, in buying and fixing the ordinary Cornish engine, &c., has induced me to address you, and if possible to avert so large an out-lay, when means are at hand whereby all the work may be done at a comparatively small outlay. The prejudice against innovation is, I am aware, very strong in every locality, but it is to be hoped that Messrs. Allen, Edgecombe, and Loam, of Liskeard, and Endean and Gregory, of London, whose duties lead them to take an active part in the control and starting of the works, will not allow themselves to be actuated by any other feelings but that of the very best, in making some amends for the temporary crusher to the hopes of those who thought all was as it ought to be, by discarding all idea of the use of Cornish engines, &c., and at once enquiring into the cost, &c., of one of the steam-pumps, of which the Journal is the usual vehicle of information. I am quite certain that the information obtained will lead to a vast saving of the limited means at the disposal of the directors of the properties in question.

Let them have the courage of discarding the prejudice in the matter of innovation upon established usage. I need hardly say that they can have the pick of some half-dozen good and well known makers, who will be glad to afford every information on their various makes. Some of the board would have done well to have attended the agricultural and machine shows, where some, if not all, of these steam pumps have been exhibited, and there to have judged for themselves, although, of course, on a very limited scale, of the utility of such appliances. I need hardly say the shows at Croydon near London, at Taunton in the West of England, and lately at Man-chester in the North. Such matters ought not to be lost sight of by the progressive miner, and where funds are small, and drainage difficulties of an enormous character, looking at the means in hand, and to come to deal therewith, it is very desirable to keep an eye upon the cheapest market. With such an apparatus and due dili-gence much might be done during the next two or three months to prove whether any or much further outlay than the 5*s.* per share already paid will be desirable, and, if not, then to go to no further outlay, but simply to close the account, and relinquish the matter to other and more successful speculators; but I should not be at all surprised that, with drainage, some portion of the properties will be found to be worthy of the best attention, and, after all, reward the possibly alarmed and irritated holders. If so, all the better, but let no waste upon expensive machinery be made, even though in-terested parties in selling may be uttermost. It is to be hoped that Mr. Loan will not allow himself to be tied by his colleagues in doing that which may be right. It is certainly to be hoped that for his own credit Mr. Endean, of London (or anyone else with him), as vendor, will be content with a proper sum, and much less than what is stated, as a fair remuneration for any outlay (which cannot be, so far, very much) and trouble he or they may have been at. So far it would appear as though the vendors had very little of their own money in the scheme at all! This does not look healthy. One hears very little of the matter of late. Have Mr. Allen and his colleagues collapsed from the local blistering? Royal Exchange.

THE DIVINING ROD.

Sir,—The efficacy of the rod is still—as it has always been—a contested subject. There are many who have an unshaken faith in the rod, because they say that lodes have been discovered by the dipping of the rod which were previously unknown. Many in-stances have been given me, the particulars of which I do not now remember. But I doubt not that the incredulous outnumber the believers in the rod, and it is because they cannot understand how a lode attracts the rod that they decline to believe until they can be shown how it is. It is said that all persons cannot, without pre-vious instruction, so hold the rod as that it shall drop over a lode, and not elsewhere. A few months ago I was in company with a practised "dowzer," a member of the College of Surgeons, also con-nected with mines, who went over a mine sett with me, and who found the lodes by dowsing to be marked in a map. I observed the dipping of the rod, and the gentleman would call out "mark a lode here" at each dropping. By following his orders I had a tolerable supply of lodes for the map, the directions of which were found by repeated crossings. I confess that the business looked very fair and satisfactory. A lawyer coming by at the time wished to try the rod, and he held it as he was instructed by the doctor, but, passing over a lode or two, according to the doctor's finding, the rod did not drop. "How the d——," said the lawyer, "does it not drop in my hand as it did in yours, Doctor? I held the rod as you did." The lawyer went away in a sceptical frame of mind as to the efficacy of the rod.

When I was in London, some years ago, a gentleman, largely in-terested in mines, told me that he had no faith in the rod, and that from the following circumstance:—He employed a "dowser" to go over some ground said to contain lodes, to find their position. The dowser worked across the land, and in one or more places the rod dropped, and where it dropped the gentlemen made a mark; but with a view to *test* the truth of the science, while the dowser's back was turned, he removed the mark a few feet off. When the dowser, at request, came back over the same line, the rod dropped over the mark lastly made, and not over the other point. Whatever faith he had before in the art or science of divining, the gentleman had now none left, for he went away a confirmed infidel.

Without professing any faith or unbelief in the utility of the science (if I may so term it), I agree with Capt. Tregay that *testing* in the *field* is the only way of arriving at a satisfactory conclusion as to the truth of the thing. Let a man who professes to be able to find lodes by the rod, be employed to go over ground—"maiden ground" as we call untried land—and if he point out a place as the site of a lode, dig and search for it; if a lode be found there it will inspire faith in the science. If the practitioner in this way finds three lodes it should establish faith in the science, however unable any person may be to show *how* the rod is so attracted.

Truro, Aug. 4. R. Symons.

THE DIVINING ROD.

Sir,—To "Enquirer" of July 21, the undersigned states that he has written scores of letters, travelled hundreds of miles, made thousands of observations, and has asked almost an unlimited number of ques-tions. He has been convinced that the subject should be treated with the respect or contempt it deserves, and if the facts gathered from the above sources—and which will, no doubt, be inserted in the Journal—should convince one of the truthfulness and accuracy or otherwise of the divining rod, shall be amply repaid for the labour.

N.B.—Cornish people readily admit their "ignorance of ignorance," but Elihu Burhitt tells us that "twenty tradesmen of even St. Ives, Cornwall, can talk as good English as the town or city in which you reside." The bump of credulity may be hereditary to us, as we be-lieve occasionally, although incomprehensible, we rely on the fact that the needle of our compasses and dials points north.

"The divining rod is believed in now only in Cornwall." Corn-wall is now certainly a large county, extending from the Land's End to Newcastle-on-Tyne, and also embraces North and South Wales, Somersetshire, Devonshire, &c. To Capt. Tregay and "Y' Gwyr" I feel personally indebted for the facts and statements respectively given and made.—*Fleet-street, Aug.* 3. Edward Skewes.

THE DIVINING ROD.

Sir,—For the information of "Enquirer," let me say the dowsing rod is a hazel or other twig, in the form of a fork of two prongs, such as a hay-fork, each prong being from 1 to 2 ft. in length, on an inch or two of the branch from which they grew. This latter part is generally cut, but is more effectual when broken, and presenting a number of points, instead of being smoothed and rounded off with a knife. The prongs are held one in each hand, with the angle of the rod downwards, the hands being firmly closed, and the rod tightly held, thumbs up, knuckles outwards; then by a turn of the wrists, by bringing the knuckles up and turning the thumbs out, elbows close to the sides, and still retaining firm hold of the rod, the operator is in a position to commence crossing and re-crossing the ground he intends to explore. I have taken some trouble to enquire into the use of the rod, and will on a future occasion give an account of my observations.—*London, July* 30. C.

EDUCATIONAL MINERALOGY.

Sir,—Your very appropriate remarks in the Journal of last week on Mr. Sopwith's models in connection with Educational Geology, induce me, with your permission, to give mineralogical students also a lift, by referring them to "Elementary Crystallography," by Mr. James B. Jordan, of the Mining Record Office, and published by Mr. Murby, of Bouverie-street. This extremely useful little shilling book contains a series of about 40 coloured diagrams (*Nets*) for the construction of good-sized models of the principal crystal-line forms, which cannot fail of being of important service to be-ginners in the study of that delightful science—Mineralogy. This is not puff. I do not even know the gentleman above named. I myself have recently constructed the models from the diagrams for a dear little boy, with a result that obliges me to write this note.

London, Aug. 3. T. A. Readwin.

WEST ESGAIR LLE MINING COMPANY.

Sir,—At the adjourned meeting of shareholders, held for the pur-pose of eliciting from the committee the facts of our position, past, present, and future (and I have no doubt that the shareholders will have to pay heavy fees for the expenses of the deputation, who evi-dently had better have stayed in London) what do we gather? The object is obvious—to enquire into some loop-hole where a few could escape; if not, the local management must come under the lash.

Now, let anyone possessed of common-sense peruse the language made use of at the adjourned meeting of Friday last; it will save me from occupying much of the Journal's valuable space, and let them duly weigh the matter for which we have to pay the fees of these gentlemen, and then boldly admit that it seems more like a dream than reality. Talk of spending money lavishly by the local management! It is absurd that three, four, if not five, men should come down from London to see if this or that is done right at a mine who would scarcely know a stone of lead from a stone of blende, and I am certain not one would know whether they were in the east or west end, north or south, whether the end was in the lode or country, whether the underlie was east, west, north, or south. But what is stated at the meeting, and what do we derive from it? They have spent in the western mine 5252*l.* 0*s.*7*d.*, and they give figures to show how this amount was arrived at, but say that the amounts were rough estimates supplied by the secretary and manager, and the committee agreed, or thought it probable, that fair value was done for the outlay. Of course they consider themselves judges; at all events they were paid for it, and, therefore, assure the share-holders they are satisfied. This exonerates the local management. At the eastern mine the committee were not satisfied with the amount of surface work done for the amount of money spent upon it, neither did the book-keeping give satisfaction. They recom-mended a reform in this direction. As regards underground, ma-chinery, &c., the committee were unanimous that everything was done in a miner-like manner, and if the mode hitherto adopted were pursued, they were of opinion that there was a fine prospect of the mine becoming remunerative.

This little information was dearly purchased by two clever mining engineers. Captain Harris, who was purposely sent down from Shropshire to inspect and to tell his little tale—we do not see much of his report in the Journal except that "with good, attentive, and careful management you should very soon meet working expenses, and before long pay dividends." Now, before I begin with Mr. John Davies, let me ask Capt. Harris a question or two; it will be beneficial to him in future (*i.e.*, to be cautious if he is again entrusted with the honour of an honest man's reputation), and let me add that I shall expect a reply through the medium of the next issue of the Journal.

Will the 2000*l.* the directors talk of raising, "with good, attentive, and careful management," very soon meet working expenses, and before long pay dividends? If not, why raise the 2000*l.*? Will 10,000*l.* pay dividends? where from? and when? With "good, careful, and attentive management." Now, this is always the cry after a man has failed with his best and most careful management. The writer of these lines has had both men under his supervision, and can fearlessly state that Capt. Harris cannot throw stones at Capt. Harvey on the score of industry.

Now, Mr. John Davies—until the last few months partner of the firm of Messrs. Durie and Davies, Aberystwith Foundry—tell us, please, why you advise the sinking of the western shaft 15 to 20 fms. deeper? As this is something new to you I will assist you. The lode in the old mine, or western portion of the sett, made a great deposit of blende at surface, and down to a certain depth, 12 or 22 fathoms, I am not certain which. The engine-shaft was sunk some 12 or 15 fathoms under the deepest level on the north side of the lode, a cross-cut was started south, and extended to a consider-able distance, but everything was so annoyingly poor that any fur-ther attempt at the old mine was given up as fruitless, unless men could be got to raise the blende in the upper levels at so much per ton. I believe this has been resorted to, when the blende sold well. It has invariably been the opinion of mining men that the blende would give place to lead ore, but in this case it did not. Therefore, knowing this by often visiting the mine, I can give you the truth. If after this the directors will give you the money to sink the shaft deeper, and as you advise it, I shall expect to see your answer to my question. On what grounds would you advise the company to sink the old shaft 20 fathoms deeper? I have always heard Captain Harvey strongly advocating the sinking of the new or eastern shaft to a depth of 50 fathoms. I saw the back of the lode at adit, and if it does not make a mine at 50 fathoms deeper it will prove an ex-ception to the rule of mining in Cardiganshire. Sink the engine-shaft, and close your eyes to everything else.

But one word more. Here lies the sequel, as mentioned at the meeting. "The present state of affairs was attributable in a large measure to the differences on the board of direction in London." Now this has been the call for nearly two years, but what a round-about way have they all sought to lay the blame on a man who is always at his post. Brother shareholders, in Capt. Harvey we have a miner. He does not profess bookkeeping, neither do I, nor thou-sands better than either of us. He sends up his cost-sheets monthly, receives the money, pays the men and merchants, sends his vouchers regularly, with never a complaint. Though of years standing, carrying on the mines satisfactorily so far as men can do, he cannot command success, yet he would be one of the first to rejoice in our success. As a local shareholder, I will cheerfully subscribe my amount to carry in the sinking of the engine-shaft, particularly under the management of Capt. Harvey, feeling perfectly satisfied that we shall be honestly treated. I assure you that we have an eye to the man who is entrusted with the expenditure of our money, and apologise for the length of my remarks. An Old Miner.

Aberystwith, Aug. 3.

AUDITORS OF MINING COMPANIES.

Sir,—"A City Man" in last week's Journal called attention to a subject of some importance. No one is so likely to make a good auditor as the man who makes accounts his business or profession. It might be possible to find a tailor capable of making a good pair of boots, but it would be an exception to the rule; so a lawyer may make a good auditor, although, perhaps, not one legal man in fifty has any knowledge of accounts. It is singular how indifferent shareholders in mining companies appear to be as to who the person is they appoint as their auditor. Usually proposed near the con-clusion of a meeting, the party put forward is elected without re-ference to his qualifications. I have been associated on many occa-sions with amateur auditors, and so far from finding their services of any use have often thought that had their fee been voted to some charity, and their services dispensed with, no one would have been the worse. On one occasion I placed a set of books and accounts before an old naval officer, who had been elected by a company as auditor. A worthy and gallant gentleman no doubt, but one who knew as much about the art of book-keeping as I know about that of navigation. This gentleman considered his work accomplished when he had seen that certain vouchers were signed and stamped with a penny stamp, and had added up the figures on either side of the balance-sheet. How it was that the debtor and creditor sides of the sheet added precisely the same in amount he was at a loss to deter-mine, but that they did so add seemed to him conclusive evidence that all must be right, and so he signed the sheet as correct.

Professional accountants do not, as a rule, solicit the auditorships of mining companies, and this may be accounted for by the small-ness of the remuneration usually voted for their services—sometimes as little as 3*l.* 3*s.* per annum. Taking this into account, can anyone be surprised at companies being indifferently served, even by an amateur? "It's but little they gives, and it's but little they gets," said the old dame of the ante-school-board days. Still, what may pay the amateur auditor to go over a certain number of vouchers and add up a few accounts will not pay an accountant to thoroughly examine and investigate a whole 12 months of a company's affairs. An auditor will often be voted less for a year than an individual director will get for one attendance at a board meeting One au-ditor I know whose remuneration has been at the rate of only 1 per cent. on the directors' fees. I imagine the legal auditor referred to by "A City Man" had but few clients, or he would never have de-serted the rich fields of his own profession, even for a day, for the gleanings to be picked up from auditor's remuneration.

London, Aug. 4. An Accountant.

GROGWINION LEAD MINING COMPANY.

Sir,—What is the Chairman of this company about that he allows such a ridiculous remuneration to be voted to the auditors? Fifty guineas per annum is simply preposterous, and the services of the gentleman who calls himself the "shareholders' auditor" are, to my thinking, dear at any price. We do not want such a display of ignorance of figures as we witnessed at the meeting; if we must have two auditors let them be men of common-sense, and let us pay them in a common-sense manner, not allowing ourselves to be led away by the frothy eloquence of an *effete* member of a profession whose business it is to misunderstand the simplest arrangement of figures. I will audit all the accounts of this company twice a year, and see every payment properly vouched, for a third of the sum voted at the meeting on the 28th. A Shareholder.

WEST MARIA AND FORTESCUE.

Sir,—In the Journal of July 24 "Hartz," commenting on Mr. Grant Maclean's eulogistic remarks concerning West Maria and For-tescue, asks for information respecting the condition and prospects of the same. As an old and patient shareholder, I can tell him that the affairs of the company are carried on in a perfectly straightfor-ward manner; the sales of arsenic and coper are good, and gradually increasing, as he may see for himself by referring to the Journal or to the official list of sales of those metals; also the calls have become beautifully less, and it is anticipated there will be no call at the meeting in November.

Captain Skewis a little while ago, when speaking of Gunnislake (Clitters), com-pared West Maria with it in these words (which, as he is manager of both these mines, are worthy of particular attention)—"West Maria is so situated, being so near the Devon Great Consols, and the ore closely resembles theirs. . . . In Gunnislake (Clitters) they sunk the shaft five successive levels without finding scarcely a ton of lead, and now they are opening up good lodes, which have some-times been worth more than 100*l.* per fathom." Gunnislake is now paying regular dividends, and is quoted 1¼ to 2; and if Mr. Hartz has a file he will find an amusing letter in the Journal for Feb. 21, 1874, which shows that Gunnislake (which has since paid 7*s.* 6*d.* per share) was thought about as much of a year ago as West Maria is now, excepting by those who knew the character of the under taking. Apart from the intrinsic value of this mine, "Hartz" would do well to purchase shares at present prices, because they have been some time depressed, and those who watch the prices scarcely need telling what that means with a concern which has been in existence over twelve years, and is not now likely to be forsaken.

Peckham, Aug. 2. West Maria Shareholder.

WEST CHIVERTON MINING COMPANY.

Sir,—I have carefully read Mr. Granville Sharp's reply to my letter of July 21, but so far as I am able to discern he does not deny one of the charges I make against him. He certainly launches out into personalities, but is that a reply expected from an official of a public company? It is the old tale of a barrister having no case, abuses his opponent. I certainly did often call upon Mr. Granville Sharp (in his capacity as secretary) for information, and I much regret it now, as it proved any-thing but trustworthy. I may add that on one occasion I offered him 11*l.* 10*s.* for some shares, which offer he refused, at the same time pressing me to buy them off him at 12*l.* per share, which I declined to do. Capt. Southey's letter, although ex-onerating him from withholding information, throws the blame on the executive in London, and while I strongly—and I am sure every right-minded man would do the same—deprecate a paid official of a company becoming a share jobber, I would once more ask Mr. Granville Sharp to answer my previous question so far as he is personally concerned. As to examining his books, probably the committee he challenges do not understand his book ciphers, so frequently shown in the market to recognised dealers. Henry Mansell.

Great Winchester-street, London, August 5.

WEST CHIVERTON MINE.

Sir,—I have seen some correspondence in the Journal on the above mine as to the fluctuation in prices, &c. I have to deplore the violent fluctuation in prices, as through sending an open order to my broker he, to my utter astonishment, bought me shares at 24½*l.*, which I requested him to sell the next day at 23*l.*, and it could not be done, but they were quoted 19*l.* to 21*l.*, and so on until they reached 12*l.* to 13*l.* I instructed him to buy at 12*l.*, but they went up then again, and I did succeed in getting some at 17½*l.* This shows something wrong, but whether throwing the mine open for inspection will cure it is doubtful. Going on the mine one day, I found the agent most obliging, and he gave full information of all their operations, but, alas! the palmy days were gone—no champagne on hand; this may annoy some, but did not affect the writer in the least. I might say the blende sales form an important item in their returns. In conclusion, my decision is that certain brokers in London agree to run shares up and down, as they find it pay.

Lostwithiel, July 29. Young Miner.

THE JAVALI AND CHONTALES MINING COMPANIES.

Sir,—In the interesting correspondence appearing from time to time in the Journal respecting the above mines the Javali appears to be rather getting the worst of it. There are, however, two facts (not alluded to by any of your cor-

spondents), your notice of which may raise the hopes of some despondent shareholders in that mine. By-the-bye, one writer speaks of it as having a mushroom character. In a work published by Chapman and Hall in 1869, entitled "Dottings on the Roadside in Nicaragua," &c., the travellers (after examination and enquiries) say of the country where the mines are situate, "All the Europeans as well as the native miners agreed that the Javali is the gem of the Chontales district." The manager of the Javali lives within a mile of the Chontales Mine, doubtless, therefore, he is able to judge of the value of both properties. However well satisfied he may be about the value of the Chontales, he evinced his estimation of the respective mines by purchasing 200 shares in the Javali last year when on leave of absence in this country. He still holds them. News arriving even so soon as the 16th inst. may cause us to respect his judgment. It is expected that the result of the month's working will amaze some of the traducers of our mine.

Bristol, Aug. 4. PICKAXE.

[For remainder of Original Correspondence, see to-day's Journal.]

Meetings of Public Companies.

LONDON AND COUNTY BANKING COMPANY.

The half-yearly general meeting of proprietors was held on Thursday, at the City Terminus Hotel, Cannon-street,

Mr. EDWARD HARBORD LUSHINGTON in the chair.

The SECRETARY read the notice convening the meeting; the report of the directors was taken as read.

The CHAIRMAN said it had been the habit of those gentlemen who from time to time had so ably filled the chair to enter into details upon each item in the balance-sheet, and to show to the proprietors how each single item bore upon the prosperity and advancement of this institution. He, too, had on this occasion his budget of favourable intelligence to detail to the proprietors; but he felt that before entering upon those details it would be advisable at once to refer to that paragraph in the report to which, no doubt, the attention of the shareholders had already been closely directed—he referred to the exceptional loss which had fallen upon this bank in consequence of the failure of Messrs. Collie and Co. Now, this being an entirely exceptional circumstance, the directors had followed a somewhat exceptional rule, and had stated in the report precisely the full amount that was in jeopardy. It would, perhaps, be neither right or proper to enter into any very particular details relating to this transaction when they recollected that Messrs. Collie and Co. were now undergoing examination for fraud before the Lord Mayor. He would, therefore, only stated that the bank had never once received any acceptances of Messrs. Collie and Co. So far as they were aware, Messrs. Collie did not accept bills. There was, therefore, less opportunity of enquiring into their responsibility; but they had drawn bills apparently for value received against merchants of good repute. In the bills that the bank had, which had not been or would not be paid at maturity or in full, they had 22 different names, and three names to each bill. While they greatly deplored the loss which had followed on this transaction, he could assure the meeting that the board had never one moment's anxiety as to the security or profit arising from legitimate joint-stock banking. Past years might, he thought, be taken into consideration to establish that fact. During the last 20 years the average rate of the dividend paid by this bank on its shares had been 17½ per cent., and during the last 10 years the average dividend had been 20 per cent.—(loud cheers)—and no doubt similar institutions could show similarly favourable results as day by day passed along, as day by day they (the directors) no doubt obtained greater experience and greater knowledge from conducting banking business, and he need not assure the shareholders that that knowledge and that experience would always be brought to bear to the best of their ability in conducting the affairs of this bank. (Hear, hear.) He must beg of the meeting, however, not to accept this statement as any apology on the part of the board for these losses, for the directors felt that they were embarked in transactions not only which were perfectly legitimate, but which he believed he might say were the best transactions that they could undertake for the benefit of this bank—he referred to discounting good mercantile bills. The proprietors were aware that they had large funds at their disposal, both from the country and metropolitan branches, and that it was necessary to employ those funds in the manner he had just described—in discounting good mercantile bills. But while he felt there was no apology due from the directors, he felt sure that the shareholders would sympathise with the managers of this bank—the principal officers of this bank—who are smarting under the sense of being the victims of a system of fraud, and who were entitled to their generous sympathy and loyal support. (Hear, hear.) As the board had laid before the proprietors their full statement regarding Messrs. Collie and Co., he had now much pleasure in turning from this perhaps disagreeable subject to enter upon the details of the balance-sheet. The first item that he had to remark upon was that of the capital paid up, which showed an increase of about 150,000*l.*, or about 10*l.* per share on 15,000 shares. The reserve fund, as stated in the printed paper before the proprietors, was 636,895*l.*, after taking off the 75,000*l.* which they had to pay for their losses in connection with Messrs. Collie and Co. Next year the directors hoped their reserve fund would stand precisely the same as it did in December, 1874. (Hear, hear.) He next came to the amount due by the bank for customers' balances, &c.—21,249,000*l.* Now this item showed an increase of nearly 2,250,000*l.* over the balances of the preceding year. (Cheers.) He thought there could be few statements more satisfactory than that. It took the bank five years, that was to say from 1865 to 1870, to increase their balances something under three millions, and now here in one year they had increased them to almost an equal amount. Did not this show the growing prosperity and improvement of this great institution? (Hear, hear.) Now, while on the subject of customers' balances, he had much pleasure in stating that there was an increase of 190 to the number of shareholders on the register. Every additional shareholder on the register enlarged the basis, and strengthened to a certain degree this institution. Not only was every additional shareholder an individual accession of strength, but he also had an opportunity of inviting the friends and people of his acquaintance to become depositors or shareholders in the bank. (Hear, hear.) It would be seen that under the head of new accounts they had received 4429 over those received last year; in that respect he thought the shareholders had done their duty. He now came to speak of the "liabilities on acceptances covered by securities." This item showed a diminution of 1,200,000*l.* The proprietors were aware that this depended upon foreign trade, and he could only say that the bank was most careful to give its acceptances after due consideration, and only for the promotion of legitimate business. Turning next to the gross profit for the half-year, the Chairman observed that, after making provision for bad and doubtful debts, that item showed an increase of 68,000*l.*, compared with the gross profit of the corresponding half-year. He had now to ask the meeting to turn to the creditor side of the account, the first item of which, "cash on hand at head office and branches and with Bank of England," and the next, "cash placed at call and at notice, covered by securities," amounting together to 6,190,000*l.*, showed an increase of 915,000*l.* Under the circumstances of the times, and having regard to the requirements of this great institution, the directors had thought it advisable to keep a much larger sum under this head than heretofore. Under Government and guaranteed stocks, other stocks, &c., there was an addition of 52,000*l.*, and he had much satisfaction in stating that since this valuation was made the Government stocks had greatly improved in price. "Discounted bills and advances to customers in town and country, 14,831,000*l.*" This showed an increase of 1,400,000*l.* He need not explain that this was really the great business of the bank, and that, therefore, this large increase must be considered in all respects highly satisfactory. (Cheers.) "Freehold premises in Lombard-street and Nicholas-lane, freehold and leasehold property at the branches, with fixtures and fittings," put down at 421,815*l.*, exhibited an increase of 117,350*l.* This increase was to be attributed partly to the great outlay they were making at the head office, and the re-construction and improvement of the branches throughout the country. He might mention, while on the subject of branches, that the board hoped very shortly to open another branch in the neighbourhood of Queen's Gate, South Kensington. They had already secured very eligible premises, and, from the great increase of population in that part of London, and the numerous streets and houses being built there, they hoped to obtain a good share of business. (Hear, hear.) There were two other small items to which he wished to call attention. The one—interest paid to customers—showed an increase of 16,000*l.* "Salaries and all other expenses at head office and branches" exhibited an increase of 1100*l.* only. Now, when they looked round upon their long list of branches, and the numerous officers that they had to employ, he was sure they would think that 1100*l.* was a very moderate increase for obtaining such excellent services as the bank did in every part of the country. (Hear, hear.) Turning next to the profit and loss account, the first point he had to notice was "Rebate on bills not due carried to new account, 53,190*l.*" This was illustrative of the large business the bank had been doing during the past half-year, and also forms a large item to be carried forward to the next account. He must next ask the meeting to regard the three following items grouped together—the dividend of 8 per cent. for half-year, the reserve to meet interest accrued on new shares, and the balance carried forward. Those three items, less 18,936*l.* on the opposite side of the account—the balance brought forward from last account—represented their net profits—165,000*l.* (Cheers.) Now, looking at this large sum, it was not for him to prophesy as regarded the future, nor was it for him to promise sweet things, but those whom he was addressing were men of business, they were accustomed to deal with figures, to look into matters closely and accurately, and he would ask them, looking at this large profit of 165,000*l.*, and looking at this very large increase in their depositors' accounts, and to the increase of 2,250,000*l.* in their customers' balances, did they not think it very likely that the bank would be able soon prudently to return to the rate of dividend paid last Christmas? (Hear, hear.) He left the proprietors to answer that question, but he could not help saying himself that he hoped it would be so. He (the Chairman) then concluded by formally moving the adoption of the report and accounts.

Mr. WILLIAM CHAMPION JONES seconded the resolution.

Mr. WEST referred to Mr. Alexander's late connection with the board of the company, and asked what amount of bills had been drawn by the Collie's on Alexander and Co. He had also expected to hear something about the new director, Mr. Brooks. He begged to ask how long he had been a shareholder in the bank, and in doing this he wished to remark that for the last 15 or 16 years there had been added some 15 or 16 directors, and in only two or three instances had they been shareholders in the preceding list issued. There were upwards of 200 shareholders qualified for the position of director, and he deemed it peculiar that the board should, when a vacancy occurred, appoint someone who became interested in the bank for the express purpose of going on the direction. He would also like to hear how the abominable frauds, from which the bank had suffered in the past six months, were to be guarded against in the future?

Mr. CROSS entirely concurred in what the last speaker had said as to the desirability of obtaining the information he asked for.

Mr. GUNN had understood that Messrs. Collie had simply drawn bills, which had been accepted by other parties. Did those other parties repudiate their connection with the transactions?

Mr. WILLIAMS asked if the loss written down to Messrs. Collie was the sole loss incurred by the bank during the past half-year; and, if not, what was the extent of the further losses.

The CHAIRMAN, in replying to the first question as to Mr. Alexander, their late director, observed that Mr. West had stated that Mr. Alexander was not a customer of the bank. That was perfectly correct. He had kept his business account at another bank; he had merely kept his private account with them. He had been a shareholder, and an old shareholder of the bank, and he was a man of great mercantile experience. As regarded the exact amount of loss they might have incurred in connection with Messrs. Alexander and Co., they had their share and no more. With reference to Mr. Brooks the directors had done their best in selecting that gentleman to fill the vacancy. He belonged to a firm of very high repute in the City, and he (the Chairman) had no doubt that the bank's connection with Mr. Brooks would bring them business and improve their position. As regarded the steps that the directors proposed taking to ensure always having good mercantile bills, and no bad bills ever coming into their hands, he invited Mr. West to visit the bank and see how business was conducted there, and the pains the manager took to throw out bad bills and keep only good ones. Then with respect to other losses, he had only to call attention to the statement in the report that "after having provided for all bad and doubtful debts," and so forth. Whatever other losses had been incurred were comprised in that phrase. Messrs. Collie and Co. had drawn bills against merchants of good repute for value received or goods delivered. Those merchants in all good faith had accepted those bills, and had never repudiated them, but they had never had the goods. That is the fraud of which I understand Collie and Co. are accused.

Mr. GUNN: Then it is through the failure of those houses, not through Messrs. Collie, that we have suffered this loss?

The CHAIRMAN said their directors were not shadows, they were good substantial men, whom the shareholders had seen from one meeting to another for many years past, and some of whom had been connected with the bank almost from its very foundation. (Hear, hear.) So far from the directors being only slightly interested in the bank they included the largest shareholders in the company. (Hear, hear.) It was very true that Mr. Brooks had only recently become a shareholder, but he was no worse a director for that.

Mr. PEED was not inclined to think that large shareholders must necessarily be good directors. There were other qualifications besides money to make good directors. He believed that so far as they could the shareholders ought to support the present board; they had carried the bank through for so many years, and with such satisfactory results. It was to be remembered that this rebate in bills not due was really and truly in excess of the balance of this last half-year. He was perfectly satisfied to receive 8 per cent. for the half-year looking at all the circumstances, and he should be very pleased if those gentlemen now composing the direction, whether large or small shareholders, would conduct the affairs of the bank as well in the future as they had done in the past.

The resolution was then put and carried unanimously.

Mr. MUNGO MCGEORGE proposed a cordial vote of thanks to the directors, which on the present occasion he felt sure the shareholders would accord with more than usual sympathy. (Hear, hear.)—Mr. PEED seconded the motion, which was carried with acclamation.

The CHAIRMAN briefly responded on behalf of himself and his colleagues.

An extraordinary general meeting was then held, when, on the motion of the CHAIRMAN, seconded by Mr. F. HARRISON, the following resolution passed at the annual meeting, on Feb. 4 last, was confirmed:—"That the directors be and are hereby authorised to grant such retiring or other allowances under such rules and regulations as may be approved by them."

Mr. Alderman RANDALL moved a vote of thanks to the Chairman, which on being seconded and passed the proceedings closed.

WEST TANKERVILLE MINING COMPANY.

A general meeting of shareholders was held at the offices, Austinfriars, on Thursday,—Mr. J. J. PYNE in the chair.

The notice convening the meeting was read.

The accounts showed a balance of assets over liabilities of the sum 502*l.* 19*s.* 7*d.*, exclusive of the uncalled capital on 1859 preference shares, amounting to 1394*l.*

The report of the directors was read as follows:—

1.—Your directors have much pleasure in presenting a most satisfactory report from Capt. Waters respecting the mine.

2.—According to the balance-sheet there is a credit of about 1800*l.*, including the amount not yet called up on the preference shares already issued. Your directors have now to announce that they have entered into an arrangement by which the remaining 993 preference shares are placed at par, thus giving a total available working balance of nearly 5000*l.*, independent of the returns.

3.—One of your directors, Mr. C. J. Hill, retires by rotation, but offers himself for re-election, as does also Mr. W. C. Buller, the auditor.

4.—Mr. Edwin Crawshay, a large shareholder, has given notice that he will be a candidate for a seat at the board at this meeting, and your directors cordially recommend and support his appointment. Mr. Crawshay has for some time taken much interest in the operations, having several times visited the mine, and examined fully into the works.

The report of Capt. Waters, the manager, was read as follows:—

Aug. 5.—In reporting to you on this occasion no scruples will prevent me from repeating my frequently expressed opinion regarding the ultimate success of the West Tankerville Mine when fully developed. It is, I fear, the opinion of many people that if a mine does not yield riches at once and pay dividends as soon as it is resuscitated and brought into actual working order, that it never will do so; but that kind of argument is a fallacy, as I hope to show. Every mine in the district has been worked and re-worked, and neither of them was brought into a profitable state in a period anything like so short as that occupied in the working of your property. Besides, neither Roman Gravels nor Tankerville yielded large returns until the main points were explored and the runs of lead ore (predicted to be in existence at the junctions of the lodes and of the shale) were driven to and laid bare for stoping and so forth. We have not yet carried out the object for which the company was started—the driving of the 48 and 62 fm. levels to the shale, the driving of a cross-cut to the side lodes east of the wood lode, and proving the Cornish lode also against the shale. Corresponding points to those enumerated existed in the two great mines herein referred to, and had the work to get to the ore in them been stopped short, as in our case here, all three mines to-day would have been on a par. But the shareholders must decide what shall be done and what left undone in this particular matter.—South Boundary Mine: This portion of the sett I consider is opening out very fairly indeed, and will, I believe, so far improve in depth as to become a profitable mine to the company. The 63 is driven south of shaft 11 fms. 3 ft. 6 in. on two divisions of lode, together 5 ft. wide, and worth 20*l.* per fathom. The prospects so far in this level are better than those seen in the 50 directly over; and this being the case, we look forward to far greater success as the end goes into the dip of the principal runs of ore seen in the 50 and upper levels. We shall commence sinking the shaft for another level in the beginning of September. The 50, south of shaft, is driven 24 fms. 4 ft. 3 in., lode in present end being worth 20*l.* per fathom; this end is now forth to within 4½ fms. of the winze in the 46, which we expect to hole by the end of the present month. The three stopes in the back of the 50, south of shaft, are each worth 40*l.* per fathom; this is the run of ore we expect to get into shortly in the 63. The lode in the winze below the 46 (now down to within 6 ft. of the 50) is worth 43*l.* per fathom; I expect when we drive south of this winze towards the shale that a rich bunch of ore will be cut into. It is very clear that the old men's bunch has continued against the shale all the way from surface to the bottom of the winze now in hand below the 46, and there can be little doubt of our having a continuance of it downwards, and that, too, of a richer character analogous to other shale deposits or bunches of ore in the district. We found little whole ground above the 46, hence our disappointment as to returns of ore; but now the levels are cutting out ground for stopes under the old workings entirely, and as by sinking the shaft regularly, which will be done in future, it is only reasonable to suppose that returns will consequently be more regular. From June, 1874, to June, 1875, the following work has been done:—Sinking shafts, 12 fms. 1 ft.; driving levels, 29 fms. 2 ft. 9 in.; sinking winzes, 15 fms. 5 ft. 3 in.; ground stoped for ore, 65 fms. 5 ft. 4 in.: total, 133 fms. 2 ft. 4 in. The returns of ore for the same period are 85 tons of lead, realising 1261*l.* 12*s.* 6*d.*; and blende 60 tons, realising 224*l.* 10*s.*: together, 1486*l.* 2*s.* 6*d.* But, taking the costs and returns for six months of the present year the following is the result:—To costs February, 1865 to July, as per sheets, 1422*l.* 3*s.* 3*d.*; by sales, February, April, June, and July, 1335*l.*: showing a loss only of 87*l.* 3*s.* 3*d.* We had never done so well as this before, and my opinion is that we shall now regularly get up in position in this part of the property.—ARTHUR WATERS.

The CHAIRMAN said, before proposing that the reports and balance-sheet be received and adopted, he would make a few remarks as to the state of the mine. It would be remembered at the last meeting that he told them he believed the best and only course to adopt at that time was to push on with the south boundary portion of the sett as rapidly as possible. Since then the shaft had been completed to the 63 fm. level, which level had been driven—as had been seen by the report of Capt. Waters—12 fms., and cut a good orey lode; the winze from the 40 to the 50 was going down in a lode worth 3 tons and 4 tons per fathom; and the 50 end, which is now 4½ fms. behind the winze, is worth nearly 2 tons per fathom. They were aware the board had been very desirous the remainder of the preference capital should be subscribed for, and from what had been circulated on this occasion it would prove of great importance to the success of the mine. He was very happy to be able to state that the whole of the capital had been placed. There had been a requisition sent in from some gentlemen residing in the neighbourhood of Wolverhampton requesting the directors to call a special meeting to alter the Articles of Association so far as regards Clause 63, referring to the fees paid to the board. Now, he could not but think this would be ill-advised. How was it possible to get gentlemen to give up their time and carry on the business of this company without, at least, paying them for their trouble and expenses? He (the Chairman) would ask whether it was consistent with business principles? Several of the directors came up from the country, and had never been paid anything for travelling expenses, which he believed would have amounted to more than the ordinary fees; he, therefore, hoped the requisition would be withdrawn. Now, as to the future working of the mine—with the whole of the preference share capital placed, they would be able to push on more vigorously, and as they had heard, Capt. Waters was still very sanguine that by driving the 48 south, on the Wood lode, towards the shale, they must come on a bunch of lead. They should also drive a cross-cut on the east for the purpose of cutting the side lodes, which had not been seen below the 28 fm. level. He should also continue cross-cutting west, by which means Cornish and Californian lodes would be drained and proved at this depth. This would involve an increased working expenditure of about 150*l.* per month. If there were any question or enquiry shareholders desired to make respecting the mine, Capt. Waters, who was present, would be glad to afford the additional information desired. He then moved that the report and balance-sheet be received and adopted.—Mr. W. GREAME seconded the proposition.

Capt. WATERS in strong terms confirmed the views expressed in his report as to the success of the mine.—In reply to questions from Mr. J. Schofield, Capt. WATERS stated that the level in Roman Gravels Mine was 45 fms. from the West Tankerville boundary, and that the boundary shaft in West Tankerville was only 12 fathoms from the Roman Gravels boundary.

Mr. CREMONINI alluded to several points, but more particularly to the question of the directors' remuneration. He had no objection to pay gentlemen their travelling expenses.—The CHAIRMAN said that, as he had already stated, would amount to more than the fees now received.

Mr. F. COPE and Mr. SCHOFIELD supported the maintenance of the present payment to the directors, particularly as during the past year there must have been additional anxiety incurred and greater trouble taken in raising the additional capital.—Mr. GREENSILL, as one of the Wolverhampton shareholders, supported the requisitionists to abolish the directors' fees.

The CHAIRMAN pointed out that the object of the requisitionists, even if the shareholders should admit its desirability, could not possibly be obtained under the present requisition, as any step involving an alteration in the Articles of Association could only be done by special resolution, and this the Act of Parliament required to be passed at one and confirmed at a second special general meeting; but independently of that the requisition had not been signed by the statutable number of shareholders holding the requisite number of shares.

After some further discussion with reference to the directors' fees, the proposition adopting the report and accounts was put and carried unanimously. Mr. Hill, the retiring director, was re-elected. Mr. Crawshay was unanimously elected a director. The retiring auditors were re-elected.

A vote of thanks to the Chairman and directors closed the proceedings.

WHEAL CREBOR MINING COMPANY.

A general meeting of shareholders was held at the offices, St. Michael's House, on Thursday,—Mr. HENRY EMANUEL in the chair.

Mr. C. B. PARRY (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

The cash accounts (from March 31 to July 31) showed a balance in hand of 257*l.* The profit and loss account for four months ending June 19 showed a profit of 207*l.*, which, added to the amount brought forward of 729*l.*, brought up the balance of assets over liabilities to 937*l.*

The report of the committee was read, as follows:—

The committee report that the accounts show a profit of 207*l.* 17*s.* 1*d.*, and assets over liabilities of 937*l.* 3*s.* 10*d.* Every cost has been charged up to the end of June. Had the lode in the 48 and 120 continued as rich as it was in May, and as the agent fully expected it would, the profit would have been 500*l.* more. The lode in this mine, he says, is subject to sudden changes, from rich to poor, and from poor to rich. Capt. Andrews, who is present, and will answer any questions, is very sanguine as to the success of the mine, and had the highest opinion of the newly acquired ground. He is also in hope that he may again shortly have a rich lode in the 48 and 120, and also in the 108 ends. In the bottom of the 120 there is a mass of mundic worth 7 to 8 tons per fathom, and this he looks upon as a most favourable indication, and this winze will now be sunk below this point at once. The 72, which is everything that can be desired for a course of ore, is home to the boundary, and a letter from the agent of the Duke of Bedford informs us that the draft of the new lease is ready, and we shall soon be in a position to drive this end again. The committee would call attention to the improved quality of the ores from the present part of the mine, which now averages 5*l.* per ton, whereas in former years it was not much over 3*l.*

The report of the agent was read, as follows:—

Aug. 3.—I beg to hand you my report of the above mine for the meeting appointed to be held on Thursday next. The 120 fathom level end has been extended about 12 fms. east of cross-course, and for the whole drivage the lode has been small and poor, and the ground spare for driving. The lode in the stope in bottom of the 120, east and west of winze, is 8 ft. wide, and is worth at the present time for copper and mundic 15*l.* per fathom. In the 108 east the lode is from 4 to 5 ft. wide, composed chiefly of quartz, capel, and mundic, and letting out water freely. The lode in the 72 east maintains its size and very promising appearance, consisting of quartz, capel, and mundic, and yielding occasional stones of yellow copper ore. In the 48 east the lode has for some time been disordered by a horse of killas, but I am pleased to say a change for the better has taken place, and the lode is becoming better defined, and is now yielding mundic and saving work for copper ore. The lode in the stope in back of the 48 is 3 ft. wide, worth 12*l.* per fathom.—JOHN ANDREWS.

The CHAIRMAN said their anticipations had been that long before this they would have been in a position to pay a dividend, but it seemed that even yet that time had not arrived. As far as he was concerned, he did not think it should be declared upon the present occasion, although that was a matter for the meeting to decide. A new lease had been obtained, including an accession of an important addition of ground, which Mr. J. Y. Watson—who was much better able to form a correct judgment than himself (the Chairman)—considered as very favourable. The committee had had every possible courtesy from the Duke's agent, and also from Mr. Paull, the Duke's toller, who seemed to think very highly of their newly-appointed manager, Capt. Andrews.

Mr. J. Y. WATSON, F.G.S., said that Capt. Andrews was present, and would be glad to reply to any questions respecting the mine.

The CHAIRMAN said that Capt. Andrews had been their manager for the last twelve months, and had given great satisfaction.

Mr. WATSON asked Capt. Andrews if his opinion had changed with regard to the success of the mine?—Capt. ANDREWS said his opinion as to the success of the mine remained unaltered.

Mr. WATSON said he had put that question because Capt. Andrews had said two or three months ago the mine would soon be in a position to pay dividends.

Capt. ANDREWS said that had the improvement which took place three months since continued, the accounts now submitted would have shown a further profit of 500*l.* As to the new ground, all he could say was that its importance could not be over-estimated, seeing what was taking place, and particularly the masterly character of the lode in the 72 fm. level, going towards Crowndale, which was once a very rich sett. The new ground was, in fact, a part of the rich Crowndale ground.

Mr. KINNEAR asked the object of keeping so large a balance in hand?

Mr. WATSON said it was not money yet, as the cash for the ore sold had not been received. A month after the sale a bill at 30 days was given. Everything was charged and paid up every month. Many mines in a much worse position than Crebor were paying dividends, because everything in Crebor had been charged up to the end of June, and there was a balance of assets over liabilities of 900*l.* Shareholders might rest perfectly satisfied that nothing would be done except for the permanent benefit of the mine, as the Chairman, two shareholders, and himself (Mr. Watson) held among them 4000 of the 6000 shares in which the company was divided; and if it were prudent to pay a dividend it would be recommended. The Chairman had increased his interest since the last meeting by 300 shares, his holding now being 2400.

Mr. WATSON, referring to the lease, said the old lease had been given up, and the new lease embraced the old and the new ground already referred to.

The accounts were passed and allowed, and with the report were ordered to be entered on the minutes.

A resolution was passed empowering the committee to sign the lease on behalf of the company, and indemnifying them against all costs in connection therewith.

The CHAIRMAN proposed that the shareholders should accord their thanks to Captain Andrews for his economic conduct of the mine.

Mr. RISLEY seconded the proposition, which was put and carried unanimously.

Capt. ANDREWS thanked the shareholders for their renewed mark of appreciative confidence, and he could only assure them that as long as he was the agent of Crebor he would do the utmost in his power to benefit the company.

A vote of thanks to the Chairman closed the proceedings.

THE MANX SILVER-LEAD MINERAL COMPANY.

The first ordinary general meeting of shareholders was held at the offices, Cable-street, Liverpool, on July 28 (Mr. R. A. WATSON, the Chairman, presiding). Among those present were Messrs. Campbell (deputy-chairman), Bleackley, Manchester; Hall, Prescot, Payne, Ruabon, Holloway (managing director); Ganderton, Cooper, Byrom (solicitor), Wigan; George W. Hughes (secretary), &c. The notice convening the meeting having been read,

The CHAIRMAN said: Gentlemen, we have met together this afternoon, in accordance with the Act of Parliament under which we are registered as a company, to give the shareholders an opportunity of hearing the reports as to the progress of the mine, and to lay before them the statement of accounts for our first four months. I will now call upon the secretary to read the statement of accounts.

The SECRETARY having read the balance sheet, the CHAIRMAN continued: You will all agree with me that the balance-sheet shows, on the whole, very satisfactory results. I have now very great pleasure in making a few remarks in reference to the future prospects of the mine. We have all worked hard for the shareholders, and we have done it with an anxious desire and a determination to succeed. We have made many visits to the mine, and have invariably returned with increased hopes and renewed confidence. The course which your directors have adopted, they believe has been a reasonable one. We know we have difficulties to contend with, at the same time we are perfectly satisfied that our mine contains large lucrative deposits of mineral wealth. It is not as though we had gone into a venture which has never been tried, ours has been well tried, which the last report from the master of the mine eminently proves, and it is the universal opinion that the main thing required to raise the lead, and consequently realise large profits is more capital. This, I am glad to say, is coming in very freely indeed. In conclusion, we must render our thanks to the proprietary for the unanimity and good feeling which has prevailed hitherto, and for the extreme courtesy we have received at their hands. You are doubtless aware that the provisional directors all retire, but, with three exceptions, are eligible for re election.

The Chairman having left the chair, Mr. Charles Payne, of Ruabon, was unanimously voted in his place.

Mr. PAYNE then proposed that Mr. Watson be re-elected Chairman of the company, remarking at the same time that he was confident the same care and attention to the company's interests Mr. Watson had exhibited in the past would be manifested by him in the future, and the shareholders, he believed, were quite safe in his hands.—A SHAREHOLDER having seconded the proposition, it was carried unanimously.

Mr. WATSON returned thanks, and again took the chair. He proposed that Messrs. David Campbell, E. G. Bleackley, J. T. Hall, Henry Ganderton, Charles Payne, and W. A. Holloway be elected directors of the company.—This was seconded by Mr. W. A. BYROM, and carried.

Mr. GANDERTON proposed that Mr. Campbell be vice-chairman, which was seconded by Mr. BLEACKLEY, and carried.

Capt. CROWE being present submitted his report, which was read. After answering satisfactorily the several questions put to him by various shareholders,

The CHAIRMAN proposed that it be printed and circulated among the shareholders, which was seconded by Mr. CAMPBELL, and carried.

Mr. PAYNE proposed that the provisional directors' statement of accounts be passed and circulated among the shareholders, which was seconded by Mr. BYROM, and carried unanimously.

The meeting concluded by a vote of thanks to the Chairman being proposed by Mr. HOLLOWAY, the managing director, seconded by Mr. GEORGE W. HUGHES, secretary, and was carried unanimously.

Mr. WATSON briefly acknowledged the vote.

The meeting was then constituted extraordinary, to alter article 63; but Mr. CAMPBELL having proposed that article 63 remain intact, it was seconded by Mr. BLEACKLEY, and carried unanimously.

TYLLWYD MINING COMPANY.

A meeting of shareholders was held at the offices of the company, Gresham House, on Wednesday,—Mr. S. F. PORTER in the chair.

The notice convening the meeting was read by the secretary, Mr. D. FORREST, and the report of the directors was taken as read.

The CHAIRMAN: Gentlemen, the balance-sheet, I think, calls for only one remark from me, and that is with reference to the amount set down for calls in arrear, which you see amount to 499*l.* 10s. The explanation is that this balance-sheet is made up to April 30, since which time nearly the whole of the arrears have been wiped off. You know there always must be some arrears, and there is a little still due under that particular head. With regard to the other items all is so clear that everyone can comprehend them, at the same time if there is any question that any shareholder wishes to put we should be most glad to give every information in our power in connection with it.

Mr. GIBSON: There is a sum due to the vendors. The shares are not wholly issued, and they ought to take shares.

The CHAIRMAN: You are aware that they have taken a large amount in shares already, and are anxious to take it all in shares, but it is just possible it may be our better course to offer them money. That question has not come up yet, and I think probably it would be advisable if you were to leave that matter in the hands of the directors. You are aware that the balance-sheet is from the commencement of the company—two years ago last April. I will propose that the balance-sheet be approved and adopted.

Mr. GIBSON seconded the motion, which was carried unanimously.

The CHAIRMAN: I am exceedingly glad on this occasion in meeting you to be able to say that we have at length turned the corner, and are selling ore. Here lies upon the table a sample taken from ore in the heap of 20 tons, which I venture to say is about as beautifully dressed as ore can be, and here (pointing to a specimen of ore on the table) is the rough material from which it comes. We were in hopes of arriving at this result at an earlier period, but owing to the rainy weather, and one thing or another, our hopes were deferred. We were not quite satisfied ourselves, and we then got Capt. Francis, who is a man of considerable experience in the neighbourhood, to go down and give us a report. Upon that, as we told you, we have acted. He decidedly said that he thought it was better that we should not attempt to sample ore until we had about 40 tons ready. We have sampled 20 tons, and I may tell you that at the end of this month, unless something unforeseen occurs, 30 tons more will be ready for the market. That will be the 40 tons spoken of, and I do hope that before the end of December or the middle of it we shall have probably 40 or 50 tons, and it may be 60 tons more. It is impossible to say exactly, as you all must know. We have now got into such a state that we shall sample ore almost monthly. Capt. Paull will tell you by-and-bye what he is doing, and how he proposes to arrive at these facts, and I think he will make it plain to you that he will be able to do it. Then you see, gentlemen, that the ore is said to be worth 15*l.* a ton. We take it at 14*l.*, and base our calculations on that, which seems to be about the price: 40 tons will produce at 14*l.*, 560*l.* That will enable us, if that pleases the shareholders, to pay a dividend at the rate of 5 per cent. at the end of next month, or the first week in October, and we leave it to you whether we shall take that 560*l.* and put it down the mine in further development or pay it in dividends. Our capital paid-up is 10,000*l.* in round figures, and that would give us 5 per cent. It is a fair and legitimate way of dealing with it.

A SHAREHOLDER: That would be at the rate of 20 per cent. per annum.

The CHAIRMAN: It would be, but I would rather say 5 per cent. If we can pay another dividend at Christmas we will, and it is my conviction that we shall be in a position to do so. The board would like to hear your views upon that point, as to whether you would like to have that surplus distributed, or capitalised and go down the mine. We have it in our power to pay the dividend, but we do not choose to exercise it.

A SHAREHOLDER: I think as we have waited more than two years, and if you have capital enough to work the mine, for my part I think we might as well share the profits.

A SHAREHOLDER: I think if it were left to the directors they would know best what to do.

Mr. GIBSON: As a small shareholder in the mine, I feel quite certain that the directors would not propose a dividend unless they saw their way clearly to do it, and I certainly think it would be a very welcome thing, and would show some of the shareholders not present an earnest of what they may expect hereafter, and that the promises that have been made are substantiated by sales of ore, and by a dividend, though a small one. I believe from the confidence the shareholders and directors have in Capt. Paull that he would oppose such a thing if the mine were not in a position to make a similar return at Christmas.

The CHAIRMAN: I may tell you now that that is the opinion of the board. I may fortify the resolution by stating to you that we believe we can have produced from the mine 15 tons per month from now to December. That would give us 60 tons, and it is very hard if, with 60 tons at 14*l.* per ton, we are not able to pay a dividend of 5 per cent. towards the close of the year, which would, at any rate, be securing 10 per cent. You are aware that this company has been only two years in existence; therefore, we arrive at good results within, what I consider, a very reasonable time.

A SHAREHOLDER: I think every shareholder must think so.

The CHAIRMAN: I think severe strictures, not only by correspondence in the papers, but also by other channels, have been passed upon us. We have been very hardly rapped at indeed, and I am very sorry to say that some of our shareholders have chosen to follow the advice and hints thrown out through the papers and other channels rather than take the information which the board have always most gladly supplied them with.

A SHAREHOLDER: The shareholders have been so bitten by many other companies that they must be excused if they are timid.

The CHAIRMAN: We have now spent 10,000*l.*, as shown on the balance-sheet. We see our way to paying a dividend of 10 per cent. this year, and having a balance of 340*l.* In addition to all that, we know from a competent authority that 10,000*l.* has laid open 800 tons of ore, which only has to be got out. There is no question about it. You have it from Capt. Francis, and you have it from Captain Paull. That 800 tons of ore, when made ready for market, is worth 11,000*l.* odd, and that is the first result of 'two years' working, and an expenditure of 10,000*l.* I do not think that is bad work. Captain Paull has since the commencement of the work displayed a very considerable amount of skill and energy in what he has done. He has driven 69 fms. of levels, he has sunk 44 fms., he has laid down 270 fms. of rails; and all that you must acknowledge to be a great amount of work, considering the hard nature of the stuff he had to go through. In addition, he has got all his dressing-floors into nice condition. He has a splendid water-wheel, hauling-gear to bring up our stuff, and he has a pump, a crushing-house, and crusher erected. I wish each of our directors could see what I have seen. I have been down, and felt very much pleasure in seeing what is there to be seen, for really there is something to show. All is in capital working order, and holding out promise of a mine that will pay us. I will not say 30 or 40 per cent., but certainly 25. You have seen from time to time a number of letters in the newspapers calling in question the most remote idea of this mine ever being a dividend-paying one, or any lead almost being produced from it. There on the table (pointing to the specimens) lies the proof that those letters are wrong. If any gentleman desires to put any questions to me, I shall be glad to reply to them so far at it is in my power to do so. The Chairman concluded by calling upon Capt. Paull to address the meeting.

Capt. PAUL, with the aid of a plan of the mine, described the various workings. He said they were sinking the shaft 12 fms. below the 20 fm. level. The ore to the west of the winze had never yet been included in any of the calculation made, and that was where the samples exhibited came from. When they sunk 1 fm. or 2 fms. further they would have to drive a cross-cut 6 fms. to intersect the lode, and then in driving west under the same ground, which they knew to be 40 fms. long, they would be laying open all this ground. They expected this would be better than in the 20 fm. level, and their present return of ore at this point would be doubled. They would have to drive a cross-cut north to cut the middle lode, and the same cross-cut would cut the south-west branch. The latter dipped towards the shaft, and consequently they would get it sooner than in the 20 fm. level. In the 30, driving north, when they reached the middle lode they would come into the bunch of ore from which they were now raising ore in the deep adit. He also proposed to extend the south cross-cut in the 20 fm. level 10 fms. or 12 fms., in order to cut the lode seen on the surface, from which he brought some specimens. It was entirely in new ground, and he proposed that two men should be put to try it. They were both raising and dressing ore.

Capt. HAMILTON asked if Capt. Paull had read the report made by Capt. Francis?——Capt. PAULL said he had read the report referred to, and arrived at the same conclusions that Capt. Francis did. He (Mr. Paull) was a little bit over him in his estimate, but since then he had laid open some ore. The mine was more productive now than when Capt. Francis was there.

Capt. HAMILTON: You have already sampled 20 tons of ore, and you have another 20 in the course of dressing?——Capt. PAULL: Yes.

Capt. HAMILTON: When that is sold, what is the minimum amount you will be able to sell monthly until you get to the 30 fm. level?——Capt. PAULL: It will be very hard for me to estimate (Hear, hear).

The CHAIRMAN: I stated we presumed 15 tons.

Capt. PAULL: I do not see any difficulty in raising 15 tons, provided the machinery goes well.

The CHAIRMAN: The mineral is there?——Capt. PAULL: Yes, and we can get it. Provided the other level turns out as we expect, we shall be raising 30 tons per month. We shall be in these lodes at Christmas, but we shall not do more in the present bunches of ore. As soon as we cut the lode we may be in a new bunch of ore. All the machinery is going well except the crusher, but still it is going, and I expect in about eight or nine days it will be in perfect order.

The CHAIRMAN announced that Mr. C. J. Bury had been elected a director of the company, and at this meeting offered himself for election by the shareholders. He (the Chairman) proposed that he be elected a director of the company.——Mr. FOULKES seconded the motion, which was carried unanimously.

Lieut. Col. Ferris, a director from the commencement of the company, was re-elected, on the motion of the CHAIRMAN, seconded by Mr. DIMMOCK.

Mr. Puckle was re-elected auditor.

Mr. FOULKES proposed a vote of thanks to the Chairman for the able and straightforward manner in which he and his fellow-directors had managed this company. He also wished to include in the vote their excellent secretary, Mr. D. Forrest, and Capt. Paull, the manager.——The CHAIRMAN said he was much obliged for the cordial way in which this vote had been proposed and passed. It had always been the desire of the board to do all they could to push this thing forward to a successful issue, and he believed they had done so.

The meeting then closed.

ROOKHOPE VALLEY MINING COMPANY.

The adjourned ordinary general meeting of shareholders of this company was held at their offices, Austinfriars, on Tuesday,

Mr. ROBERT WILSON in the chair.

The London Manager read the notice convening the meeting.

The CHAIRMAN said this meeting had been, as the shareholders were aware, adjourned from June 29, for the purpose of seeing if funds could be raised to carry on the mine. Mr. Murchison was then in hopes of being able to arrange matters, and Mr. Hill thought an advance would be obtained from another source. He (the Chairman) had been to see the secretary of that company, and he found them indisposed to advance the money; in fact, the company had all but put a resolution on the minutes of their board meeting that they would not lend any money to a mining company except on very onerous terms, and they would require about a half-share in all the future profits, and, before doing anything, they would require that an engineer selected by themselves should be sent to the mine to report upon it.

A SHAREHOLDER: At the expense of this company, I suppose?

The CHAIRMAN: Yes; and of course it would have been of very little use for the directors to have entertained terms of that kind; they would not have been justified in doing so. The directors agreed to give up 1200 shares, provided anybody would advance money to carry on the mine, but nothing practical came of the offer. After the last meeting the directors were unable to pay the costs, and seeing themselves quite without funds to meet those costs and other liabilities they got an advance of 1200*l.*, and their present position was, therefore, that their liabilities were 1877*l.*, and their assets 605*l.*, including a sale of ore last week, or a balance against the company of 1272*l.* 12s. 2d. That sum included directors' fees, which would be given up if the mine goes on, leaving 962*l.* as the debit balance, so they were a little better off in that respect than at the last meeting.

Mr. MURCHISON then read the following report from the agent, dated Aug. 2:—

Aug. 2.—I have suspended for the present the driving the adit end, and placed the two men in the back of the 15, which makes them six; set at 2*l.* 10s. per cubic fathom, and yielding 2 tons of lead ore per fathom. In the back of the 25, by four men, at 2*l.* 2s. per fathom, and will yield 25 cwts. per fathom. The four men in the back of the 42 would not take my offer, and have not begun for this month yet. As you are aware, the whole of the 20 tons sold on the 28th is delivered. I shall endeavour to get 20 tons more as soon as possible. We are in the height of the hay harvest, and as most of our men have a little hay of their own, they have not attended their work very well. They say they will make it up afterwards. That was why I wished to set contracts, and the men could receive pay for no more than they had worked. I have just got word that the Weardale Company is going to run on their line merchandise for one month more.—DANIEL BROWN.

Mr. MURCHISON also read a letter from Mr. Blenkiron.

The CHAIRMAN said no money had been subscribed towards the loan since the meeting was adjourned, and their position was just about the same, except that a slight profit was made in last month. The question was, therefore, what should be done to meet their liabilities and to work properly?

A SHAREHOLDER: Have the directors any other scheme?——The CHAIRMAN replied in the negative. The advance enabled them to pay off everything, then due.

Mr. MURCHISON remarked that the labour costs and everything else had been paid up to July 24, when the debit balance was 960*l.*

A SHAREHOLDER: What interest is to be paid on the advance?——Mr. MURCHISON: Seven per cent.

The CHAIRMAN, in reply to a question, said the subscribers to the loan were promised on the understanding that a sufficient sum could be raised to carry on the mine.

Mr. WINGROVE and Mr. PETER WATSON suggested that if possible the meeting should be adjourned until after the holidays, when there would be more probability of obtaining funds.

After a lengthy conversation, in which various suggestions were made, the meeting was again adjourned until October.

[For remainder of Meetings see to-day's Journal.]

FOREIGN MINING AND METALLURGY.

The general tone of the French iron trade remains unaltered. Business is very restricted, and at some points there is scarcely anything doing. At Paris the quotation for merchants' iron and T iron is about 8*l.* 12s. per ton; heavy plates are maintained at 11*l.* 4s. per ton. Concessions are made even in transactions for exportation. Thus, a contract for special iron intended for barracks at Mytho, Cochin China, has been let at 11*l.* 8s. 10d. per ton. The imports of iron into Paris in the first five months of this year, as compared with the corresponding period of 1874, show an increase of 2314 tons; the imports of pig have, however, fallen off 314 tons. Business has rather fallen off in the St. Dizier group. First-fusion pig is completely neglected; as regards second-fusion pig, it has been in little demand. The foundries have also presented less activity; the demand for special descriptions of iron has, however, been pretty good. At Nevers the Châtillon and Commentry Forges have obtained a contract at 7*l.* 16s. per ton for from 2100 to 3000 tons of cold-blast pig, and another at 8*l.* 14s. per ton for from 1200 to 1800 tons of cold-blast charcoal-made pig for fine plates. In the Meurthe-et-Moselle, as well as in the Nord, the situation has not varied; the centre group has alone exhibited a slightly upward tendency. It is stated that MM. de Wendel have just acquired the Cons-la-Grandville blast furnaces, belonging to M. de Lambertye. Six new concessions of ironstone mines have been granted in the neighbourhood of Metz. The imports of pig, iron, and steel into France during the first half of this year do not exhibit very remarkable results. Thus, the imports of pig amounted to 78,823 tons, showing an augmentation of 48 per cent.; the imports of iron were, however, only 18,117 tons, showing a decline of about 30 per cent. The slackening of the French iron trade is further indicated by the diminution in the exports this year. Thus, the direct exports to June 30 amounted to only 39,588 tons, showing a diminution of about 36 per cent. as compared with the corresponding period of 1874. The imports of minerals into France to June 30 this year amounted to 449,059 tons, showing an augmentation of 23 per cent. this year. The exports of minerals from France to June 30 this year were only 89,500 tons, against 118,000 tons in the corresponding period of 1874.

Business in copper has been in rather a languishing state at Paris. Chilian in bars, delivered at Havre, has made 86*l.* per ton; ditto ordinary descriptions, 84*l.* 8s. per ton; ditto in ingots, 90*l.* per ton; English tough cake, 89*l.* per ton; and pure Corocoro minerals, 84*l.* 8s. per ton. There has been no great amount of business in copper at Havre; prices have been nominally those of the English market. The German copper markets have continued quiet. Pending the next sale of the Dutch Society of Commerce, transactions in tin have presented no great importance. Some hundreds of ingots of Banca have found purchasers at 49¼ fl. to 49½ fl. for immediate delivery. In Billiton some transactions have taken place at 46¼ fl.; at this price there were still sellers. The Paris tin market has been rather drooping, except for Banca, which has about maintained previous rates. The German tin markets have been colourless, in consequence of the scarcity of business. French lead has made 22*l.* 10s. per ton at Paris, and English lead 22*l.* 4s. per ton. Under the influence of the favourable advices from Spain and England, lead has maintained a good tone upon the Marseilles market. There is nothing fresh to report with respect to the German lead markets at Paris. Silesian zinc, delivered at Havre, has made 25*l.*; other good marks, delivered at Havre, 24*l.* 16s., and ditto at Paris, 25*l.* per ton. At Marseilles, Vieille-Montagne zinc in sheets has realised 34*l.* per ton. The German zinc markets have continued firm, although there have been comparatively few transactions upon them.

The French coal trade has continued quiet. A coal *entrepot* is about to be established at the Parc de Bercy, near the Pont Napoleon, at Paris. This *entrepot* will be in connection with the Paris, Lyons, and Mediterranean and Girdle of Paris railways. This *entrepot* will also have a quay furnished with cranes next the Seine. The directors of the Bruay (Pas-de-Calais) Collieries Company have just reported progress for 1874-5. The extraction of the year is returned at 2,800,000 hectolitres—rather more than less. This total presented an augmentation of 16 per cent. as compared with 1873-4. All the works which the company has on hand have received a great impetus. The dividend of 1874-5 has been fixed at 14*l.* per share; a similar dividend was paid for 1873-4.

Considerable feebleness has characterised business in iron in Belgium this week, and pig has experienced a further drop, Luxembourg being offered at 5s. 4d. per quintal at Charleroi. There has been a certain amount of business passing in merchants' iron and plates in Belgium; but manufacturers of rails continue to complain of the situation. A powerful German competitor, the Bocham Company, has secured an important contract for 14,000 tons of Bessemer rails for Portugal, the Belgium works being thus deprived of a valuable contingent of business. M. Weller has just been appointed secretary of the Charleroi Association of Forgemasters. A contract is about to be let for 35 tenders for locomotives for the Belgian State Railways. The Great Central Belgian Railway Company is about to let a contract for 47 passenger carriages, 30 baggage vans, 450 trucks of various types, &c.

The principal Belgian colliery proprietors have been making offers at slightly lower rates, but this has not had much effect upon business, purchasers having exhibited considerable reserve. They do not probably expect a further decline, but they hesitate to lay in supplies without the certainty of a revival in affairs. Upon the whole, it must be said that there has been only a small current of orders from day to day to maintain the Belgian collieries in activity. The gas coal of the Mons basin has been rather sought after by the Parisian Gas Company. French, German, and English coal are all competing now with Belgian coal upon the Belgian markets, and this competition is of sufficient importance to exercise an adverse influence upon the interests of Belgian colliery proprietors. The Hasard Colliery Company, at Micheroux, is about to construct a second boarding-house intended for the accommodation of about 150 boarders. It would be well if other colliery proprietors adopted a similar policy, as it would check the nomadic habits of working miners. The Grands Makets and Champ d'Oiseaux Colliery Company, at Temeppe, has contracted to supply 4150 tons of domestic qualities of coal to the civil hospitals of Brussels at 17s. 6d. per ton, delivered. The Belle Vue Colliery Company commenced the payment on Saturday of a dividend of 12s. per share.

THE DECLINE IN THE VALUE OF QUICKSILVER.

The decline of nearly 50 per cent. in the value of quicksilver during the past six or eight months, in consequence of its increased production in California, and the removal of the seat of hostilities in Spain to the north and south-east, has attracted general attention. In no other part of the world has cinnabar, the common ore of quicksilver, been found so widely disseminated as in California. Until the discoveries in that State the market depended almost wholly upon the old Almaden, of Spain, and the Idria, of Austria, for this important requisite in the collection of its metallic wealth. The old Almaden quicksilver mine in La Mancha, Spain, as is well known, was worked 700 years before the Christian era, and is still producing more than any other outside of California. The amounts produced by the Almaden Mine were:—

From 1524 to 1646	Spanish cwts. or quintals	540,000
1646 to 1757		420,560
1757 to 1803		460,443
Total		1,430,003

Average production during 279 years, 5126 cwts., of 101½ lbs. of our weight each, and reducing the whole to flasks at 76½ lbs. each, it will be seen that the annual production up to the commencement of the present century had been 6800 flasks on an average. The Idria Mines of Illyria were discovered in 1497, and from 4000 to 5000 cwts. annually gradually rose to 12,000 to 16,000. The Huancavelica Mines of Peru, produced from 1570 to 1713, altogether 778,089 cwts., and then gave out.

Spain in 1870 exported 31,136 cwts., equal to 41,311 flasks, the total increase during the preceding five years having been 55,000 cwts. The monthly production of the State of California had reached a year ago something like 3100 flasks of 76½ lbs. each, toward which the various mines contributed as follows:—

New Almaden	1600
Redington	600
New Idria	600
Other mines	300

Being 37,200 flasks per annum, of which about one-half was exported. In 1871, there were produced 31,881 flasks, against 29,546 in 1870, and they were distributed as follows:—

To New York	800
China	7900
Mexico	3081
South America	2200
Australia	1100
Other countries	124=15,205

The remaining 16,676 flasks were retained for the consumption of California and Nevada. Since the enormous development of silver mining in Nevada the amount exported has been gradually falling off, as the following figures will show:—

EXPORT OF QUICKSILVER FROM CALIFORNIA.

1852	Flasks 900	1863	Flasks 26,014
1853	12,737	1864	36,927
1854	20,963	1865	42,469
1855	27,165	1866	30,287
1856	28,740	1867	28,853
1857	27,262	1868	44,506
1858	24,142	1869	24,415
1859	3,399	1870	13,788
1860	9,448	1871	15,205
1861	35,995	1872	13,098
1862	33,747		

This shows a total export during the 21 years of 495,060 flasks, or, on an average, 23,574 annually. The total product of the mines since they were first opened, including last year's yield, which was 34,154 flasks, aggregated 683,979 flasks, or, at 76½ lbs. each, 62,324,393 lbs., an average of 29,740 flasks during 23 years. The total profits made at the mine were the following: 62,324,393 lbs. selling, or assumed by the combined mine owners, at an average of 50 c., gold, each, $31,162,196; 62,324,393 lbs. costing, on an average, 26c., $16,204,342·18 profit: $14,957,853·82 gold. The price in this city in 1874 averaged $1·37¾, gold, or about 87½ c. higher than the average price for 23 years. That price was, taking into account the value of exports and that consumed on the Pacific Coast, 50 c., gold, per pound. This would represent an extra profit in 1874 of $2,286,183, gold; less freight, $13,468, gold, or an extra net profit of $5,166,388, gold, from 1871 to 1874, both included. Divided among a comparatively few, these were enormous profits in the short space of four years, but they are only part of the real profits, as the figures of gross value of quicksilver sold and cost of extraction stand thus:—

Total value of quicksilver	Gold $9,995,380·96
Cost of ditto	2,459,076·36
Net profit for four years	$7,536,304·60

This shows that for every dollar expended the owners of the mines have taken in over $4, which amount has come out of the pockets of the miners, mineowners, &c., throughout the world.

The Rothschilds, who have absolute control over the Almaden Mines, in Spain, under a lease and grant from the Government of that country, perceiving toward the close of last year that the Carlist armies would be unable at any time to threaten La Mancha, and thus hamper the production and transportion of quicksilver, began to reduce the price, which has continued declining ever since, till it reached 11*l.* per flask, where it seems to have settled for the moment. The fall was precipitated by the news that the Californian mines were turning out unusually large quantities, and prices have dropped to $50 per flask at San Francisco, or 70 c., gold, per pound in smaller quantities, while here we remain quiet at 75 c., gold. Since then news has reached us that in Mexico also important discoveries have been made at Huitzuco. The latest report to hand from these mines is dated Feb. 16, when they had been worked four months, and turned out altogether 450 cwts. From all appearances some time will elapse ere quicksilver can materially recover from the depreciation it has thus far suffered this year.—*Iron Age* (U.S.)

MINING IN NEVADA—COMSTOCK LODE.

The forthcoming report of the United States Commissioner of Mining Statistics will contain an account of operations upon the Comstock Lode, which will be of considerable interest. Referring to the subject, Dr. Rossiter W. Raymond remarks that few persons who are not personally familiar with the workings of the Comstock Mines can appreciate the extraordinary difficulties attending the thorough exploration of this vein. In ordinary vein mining, where the lode is comprised between walls a few feet apart, it is sufficient to sink a shaft and to run drifts at suitable intervals in depth. Each drift conclusively proves the character of the vein material at the level upon which it is run, and it is but rarely that outlying bodies in either wall are passed without discovery, particularly if the walls are watched with proper faithfulness and skill. But in a vein which ranges in width from 50 to 1000 ft.—for it is said that the Comstock in early days and near the surface showed at one point at least the latter extraordinary extent—each level must be cut up with drifts and cross-cuts indefinitely, and not until the whole area has been thus sub-divided can explorations be regarded as complete. Moreover, fissure veins have commonly some kind of ore-bearing zone, or "pay streak," parallel with the walls, but the Comstock has presented a series of practically isolated bodies of ore, floating, as it were, in a medium of barren vein material, of the volume of which they occupy not more than the fiftieth part. Add to these difficulties the trouble and cost of securing ventilation and drainage at great depths, and some notion may be gained of the extraordinary expense of exploration in this vein.

These considerations, together with the manner in which the Comstock has been subdivided into numerous claims, each requiring its separate administration and means of exploration, furnish at once the explanation and the excuse for two evils which have attended the history of its development. Much dead work has been done which was unnecessary, and much which was needed has been left undone. Ore bodies have been discovered in ground already passed by after insufficient exploration, and it is not impossible that this experience may be again repeated—though, of course, the chances of it decrease from year to year, and there are now but a few spaces left in the levels above 1000 ft. where further investigations in barren rock could be reasonably advised. When ore bodies have been discovered their dimensions and position are such as to require an enormously expensive system of timbering in the stopes. One of the most interesting passages in Mr. Lock-

hardt's report briefly describes the system made necessary by the great diameter of the big bonanza. It is still more expensive than the usual Comstock method, but it has the advantage of greater strength, nearly one-fourth of the ground being filled in solidly with waste rock, and a very important additional merit (to which Mr. Luckhardt does not allude, but which seems to Dr. Raymond worthy of emphatic mention) is the increased protection which it offers against fire. The immense open spaces cribbed with timber, through which the flames, once started, could range for hundreds of feet with unchecked and frightfully increasing intensity, will no longer exist. Every fourth set of timber furnishes a barrier at which the progress of destruction may be delayed or stopped. The consolidation of a number of small claims into a large one, which has been effected in a number of instances on the Comstock, has proved highly beneficial, and might be carried still further with advantage. An ore deposit so peculiarly constituted, involving such alternations from "bonanza" to barrenness, need especially to be wrought by strong companies controlling large sections of ground. It is satisfactory to find that this tendency is increasing.

The peculiar location of the claims, owing to the unusual character of the deposits, can only be fully appreciated by those who are not actually working the mines from an inspection of a map of the district, and the new edition of Lasalle's Map of Mining Claims on the Comstock Lode and Vicinity (San Francisco: Le Count Bros., Montogemery-street) is without question the best work of the kind that can be consulted. The map, which shows all locations made up to date, June, 1875, has been carefully compiled and drawn by Mr. Edward B. Lasalle, the task having occupied him over four months, and necessitated the consultation of almost innumerable, and mostly original, surveys. The scale is 1200 ft. to the inch, and this map shows the surface boundaries of nearly 450 mining claims in Virginia, Gold Hill, American Flat, Silver Star, Devil's Gate, and Flowery districts, many claims being included which have not been shown on any previously published map. The principal topographical features of the country—railroads, ravines, mountain tops, and mills—have all been laid down, and there is a carefully compiled list of the mining claims, with their dimensions, arranged in alphabetical order, which will prove very useful. The map is altogether a very creditable production, and will, no doubt, be appreciated by all connected with mining enterprise in the Comstock district.

GRYLLS'S ANNUAL MINING SHEET,

FROM JUNE 30, 1874, TO JUNE 30, 1875,

CONTAINING

The quantity of copper ore sold from each mine, British and Foreign—Average price per 21 cwts., and the amount of money—The average standard, produce, and price for the year, both in Cornwall and Wales—The total amount of ore, fine copper, and money—Each company's purchase—And the particulars of copper ores sold at the Ticketings in Cornwall from June 30, 1856, to June 30, 1875.

CORNWALL.

Mines.	Ore (21 cwts).	Amount.	Price.
Annear's Ore	16	£ 55 8 0	£3 9 6
Basset, Wheal	537	3634 15 0	6 15 6
Bedford United Mines	843	3284 15 6	3 17 6
Belstone Mines	63	415 18 6	6 12 0
Botallack	289	3170 12 0	10 9 6
Bottle Hill	14	119 0 0	8 10 0
Brookwood	1653	8487 7 0	5 2 6
Buller, Wheal	29	70 16 6	2 9 0
Busy, Wheal	12	52 16 0	4 8 0
Calstock Consols	12	38 8 0	3 4 0
Carn Brea Mines	735	4348 1 6	5 18 6
Cathedral Mine	211	1248 7 6	5 18 6
Champion's Ore	57	265 8 6	4 13 0
Collom's Ore	20	76 10 0	3 16 6
Craddock Moor	31	211 0 6	6 16 0
Crebor, Wheal	486	2390 4 0	4 18 6
Crelake	16	73 4 0	4 11 6
Crenver and Wheal Abraham	3108	12771 5 6	4 2 0
Delbridge's Ore	9	13 19 0	1 11 0
Devon Great Consols	5970	25237 12 0	4 4 6
Dolcoath	43	300 14 0	7 3 0
Duchy Great Consols	193	420 4 6	2 3 6
East Basset	231	1330 19 0	4 0 6
East Caradon	1670	9728 12 6	5 16 6
East Pool	1683	5294 17 0	3 3 0
East Wheal Grenville	250	856 13 0	3 8 6
Emma, Wheal	100	395 15 0	3 19 0
Emmens United Mines	41	139 8 0	3 8 0
Friendship, Wheal	186	1231 5 6	6 12 6
Gawton Copper Mine	481	1499 13 0	3 2 6
Glasgow Caradon	2930	15541 4 0	5 6 0
Grenville, Wheal	7	18 0 6	2 11 6
Gunnis Lake Clitters	1159	7739 0 0	6 13 6
Hingston Down	3090	8419 10 6	2 14 6
Levant Mine	47	677 13 6	14 8 6
Marke Valley	4269	15876 1 0	3 14 6
Mitchell's Ore	6	22 7 0	3 14 6
New Crowndale	10	25 10 0	2 11 0
New Dolcoath	21	110 11 6	5 5 6
New Pembroke	341	3258 17 0	9 11 0
New Rosewarne	50	260 4 6	6 4 0
North Treskerby	36	186 15 0	5 4 0
North Wheal Crofty	7	29 4 6	4 3 6
Old Bottle Hill	11	128 14 0	11 14 0
Pedn-an-drea	6	45 3 0	7 10 6
Penstruthal	14	169 15 0	12 2 6
Phillips's Ore	7	25 0 6	3 11 6
Phœnix Mines	455	3314 9 0	7 5 6
Poldice	7	20 16 0	2 19 6
Prince of Wales Mine	581	2751 3 0	4 14 6
Rose United, Wheal	11	44 0 0	4 0 0
Rosewarne, United	20	68 10 0	3 8 6
Russell, Wheal	1202	4067 7 0	3 7 6
St. Aubyn United	362	2144 1 6	5 18 6
St. Ives Consols	7	95 7 6	13 12 6
Seton, Wheal	75	237 9 6	3 3 6
Skewis's Ore	4	25 2 6	6 5 6
South Caradon	5508	38705 1 6	7 0 6
South Carn Brea	170	818 13 0	4 16 6
South Crofty	1343	4527 16 6	3 7 6
South Dolcoath	225	1027 7 0	4 11 6
South Roskear	113	346 19 6	3 1 6
South Tolcarne	20	56 10 0	2 16 6
South Wheal Frances	62	267 17 6	4 6 6
Spearn Moor	7	121 10 0	17 7 0
Treffry's Regulus	62	961 16 0	15 10 6
Tremenheere	33	220 6 0	6 13 6
Unity Wood Mine	15	70 17 6	4 14 6
West Basset	388	2449 16 0	6 6 6
West Caradon	10	35 15 0	3 11 6
West Maria and Fortescue	700	3553 15 0	5 1 6
West Poldice	30	286 3 6	9 11 0
West Roskear	95	318 7 6	3 7 0
West Seton	1521	7903 0 6	5 4 0
West Stray Park	2	6 0 0	3 0 0
West Tolgus	3665	24735 10 0	6 15 0
Williams's Ore	59	271 4 6	4 12 0

WALES.

Alten Ore	248	£ 942 0 0	£3 16 0
Australian Ore	85	1278 13 6	15 1 0
Ballycummisk	38	219 14 0	5 15 6
Bamfylde	372	2575 19 0	6 18 6
Berehaven	4702	28701 5 6	6 2 0
Burrawong Ore	161	1869 19 6	11 12 6
Canadian Ore	147	507 3 0	3 9 0
Cape Ore and Regulus	11501	283497 12 6	24 13 0
Chili Regulus	22	827 15 0	37 12 6
Cloncurry	9	316 17 6	35 4 0
Concordia Ore	16	296 0 0	18 10 0
Concordia Regulus	18	651 18 6	36 4 6
Coosheen	4	28 4 0	7 1 0
Copper Dust	21	142 16 0	6 16 0
Copper Matt	150	922 9 0	6 3 0
Copper Ore	469	4625 1 6	9 7 0
Copper Precipitate	323	4861 12 6	15 1 0
Copper Regulus	105	2020 9 0	24 19 0
Copper Scale	3	61 15 0	20 11 6
Copper Stuff	3	133 8 6	44 9 6
Copper Sludge	9	184 8 0	20 10 0
Copper Waste	22	120 12 6	5 9 6
Cuba Ore	319	915 6 6	2 17 6
Del Soto	157	3086 15 6	19 13 0
Fursdon Ore	94	580 10 6	6 3 6
Italian Ore	117	1176 16 6	10 1 0
Knockmahon	2839	18101 6 6	6 7 6
La que lo Abarca Ore	105	1690 10 0	16 2 0
Libiola Ore	214	1854 12 6	8 13 6
Lisbon Ore	15	94 10 0	6 6 0
Norway Ore	6	48 4 0	7 14 0
Portugusse Ore	75	835 16 0	11 3 0
St. Josephsburg Ore	114	1984 15 0	17 8 0
Sobral	216	1193 18 6	5 10 6
Spanish Ore	60	181 10 0	3 0 6
Sweepings	3	15 5 0	5 1 6
Tolhadella	34	489 0 0	14 7 6
Union Ore	4000	21651 6 6	5 8 6
Var Ore	333	4653 7 6	13 19 6
West Canada Ore	497	7137 18 0	14 7 0
West Canada Regulus	7	260 15 0	37 5 0
West Canada Slags	60	495 0 0	8 5 0
White Metal	5	81 5 0	16 5 0

Copper Ores sold in Cornwall, from June 30, 1874, to June 30, 1875:

Copper ores	47,856 (21 cwts.)	Average produce	7
Fine copper	2370 tons 17 cwts.	Average standard	£110 0 0
Amount of money	£ 239,189 14 0	Average price	5 0 0

Compared with the previous year,

Copper ores—decrease	3,471 (21 cwts.)	Fine copper—decrease	304 tons 14 cwts.

Amount of money—increase ..... £30,941 5s. 6d.

Copper Ores sold in Wales, from June 30, 1874, to June 30, 1875:

Copper ores	27,698 (21 cwts.)	Average produce	18¼ 1-16
Fine copper	5071 tons 12 cwts.	Average standard	£ 91 11 0
Amount of money	£ 401,912 2 6	Average price	14 10 0

Compared with the previous year,

Copper ores—decrease.	1,333 (21 cwts.)	Fine copper—decrease...	66 tons 18 cwts.

Amount of money—increase ..... £16,650 7s. 6d.

Totals in Cornwall and Wales.

Copper ores	75,554 (21 cwts.)	Fine copper	8442 tons 9 cwt.

Amount of money ..... £641,071 16s. 6d.

Compared with the previous year,

Copper ores—decrease ...	4804 (21 cwts.)	Fine copper—decrease.	371 tons 12 cwts.

Amount of money—increase ..... £37,591 13s. 0d.

Copper Ores purchased by the Copper Companies from June 30, 1874, to June 30, 1875:—

Purchasers.	Ore (21 cwts.)	Tons copper.	Amount.
Vivian and Sons	12,288	1232 6	£91,906 4 4
Pascoe Grenfell and Sons	7,622	1038 19	80,567 12 10
Nevill, Druce, and Co.	10,314	1161 8	87,338 16 2
Willyams, Foster, and Co.	15,113	1557 13	117,617 2 5
Mason and Elkington	9,678	967 3	72,251 17 0
Copper Miners' Company	6,861	808 17	62,354 12 4
C. Lambert	5,009	698 0	53,820 15 10
Newton, Keates, and Co.	1,237	123 4	9,274 6 2
Sweetland, Tuttle, and Co.	6,386	649 19	49,120 1 11
British and Foreign Copper Co.	353	103 15	8,567 4 0
Ravenhead Copper Company	80	23 12	1,170 0 0
Capper Pass and Son	536	57 16	4,836 13 0
W. Roberts, Jun.	67	19 17	1,644 10 6

Copper Ores sold at the Ticketings in Cornwall, from June 30, 1856, to June 30, 1875:—

Date.	Ore (21 cwts.)	Money.	Produce.	Standard.
1856	209,305	£1,283,639 8 6	6¾	£141 10 0
1857	198,697	1,276,844 12 0	6½	140 0 0
1858	183,292	1,083,728 18 6	6¾	139 6 0
1859	183,944	1,079,075 17 0	6¾	133 6 0
1860	180,448	1,079,403 4 6	6½	133 18 0
1861	176,097	1,013,400 5 6	6¼	130 1 0
1862	186,662	977,017 2 6	6¼	127 13 0
1863	176,285	872,474 4 6	6¾	120 9 0
1864	166,707	858,586 1 0	6¾	124 17 0
1865	164,940	806,833 10 0	6½	125 3 0
1866	148,777	678,641 3 0	6½	118 7 0
1867	125,679	547,689 8 6	6¾	107 1 0
1868	121,815	554,029 19 0	6¾	110 15 0
1869	103,199	430,749 10 6	6¾	103 3 0
1870	90,227	374,612 0 6	7	98 12 0
1871	74,367	292,122 4 6	6¾	99 11 0
1872	67,543	316,213 1 9	6½	114 17 0
1873	61,715	271,036 10 0	6½	110 5 0
1874	51,327	218,218 8 6	7⅛	97 16 0
1875	47,856	239,159 14 0	7	110 0 0

THE MINERAL RESOURCES OF THE SOUTH-WEST OF IRELAND—No. XVI.

[FROM OUR SPECIAL CORRESPONDENT.]

BALLYDEHOB MINE.—This copper mine is situate in a valley about half-a-mile to the west of the town of Ballydehob. It was opened some 60 years ago by the late Col. Hall, who in superficial workings raised considerable quantities of copper ore, which, from documents I have seen, sold without dressing at a profit, and, what is very unusual, the mine was making profit when operations ceased. It appears, however, that family reasons, and an objectionable contemplated family alliance, were the sole cause of Col. Hall's retiring from the mine. The property is favourably situated for carrying out operations on an extensive scale, there being good roads and near a shipping port; there is a fine stream of water running through the mine, which may be applied in various useful ways. The strata, consisting of soft clay-slate, flookan-courses, cross-courses, and elvans, are most favourable for the production of copper ore. There are several parallel lodes, forming a band or belt of mineral formation, within a distance of 50 fms. from north to south; these are intersected by a large cross-course, and near or at the point of intersection there will no doubt be great discoveries of copper ore. The ore is of rich quality, and consists of grey, purple, and the green carbonate of copper. There is no question but that gold will be found in this mine. It seems that a lady and gentleman one fine evening, while talking soft things to each other near one of the shafts, the lady's gold watch and chain by some means got disengaged, and fell into the shaft; so that there is gold for a certainty in Ballydehob Mine, and the soft talk *ended in talk*. To the north-west of Ballydehob the ground rises gradually to a height of 900 ft. above the sea level at Mount Corin. To the north it rises to a height of 600 ft. at Derrycarhoon and Shronagree, while to the north-east Mount Kid is 1000 ft. above the sea level. This great mountain range, consisting of clay-slate (or good killas), elvan ranges, cross-courses, masses of quartz rocks, &c., contains a great band or zone of copper lodes, and no doubt incalculable mineral wealth, for the character and quality of the ore in the West Cork mountains is equal to that of Chili, Peru, or Australia. In a few hours people may come from any part of England and see and judge for themselves. There is very little explanation required—the mountains being denuded of earthy substances, the lodes crop out at the surface. Any man may, therefore, walk for miles along the run and on the backs of lodes, and may dig out green carbonate of copper, rich grey ore, purple ore, &c. There are old diggings in those mountains attributed to the Danes, but it is uncertain when or by whom they were made—suffice it that these great mountain mines are still in a virgin state. In superficial openings on the backs of those lodes I have seen scores of tons of grey ore, carbonate of copper, &c., dug out, and which without any dressing sold at a high price. I never saw a surface opening made but it produced ore. Why will people throw away millions abroad, and neglect really valuable property at home?

AUSTRALIAN MINES.

PORT PHILLIP AND COLONIAL GOLD.—June 12: Quantity of quartz crushed for the four weeks ending May 19, 3212 tons; pyrites treated, 28 tons. Total gold obtained, 783 ozs. 10 dwts., or an average per ton of 4 dwts. 21 grs. Receipts, 328*l*. 8s. 1d.; payments, 2855*l*. 9s. 9d.; profit, 428*l*. 18s. 4d., which, added to last month's credit balance of 800*l*. 7s. 10d., made an available balance of 1229*l*. 6s. 2d., which was carried forward to next month's account.

AUSTRALIAN CENTRAL GOLD.—Mr. Gill (June 14) writes—I now anticipate being in the deep ground in about four weeks from date, and I then trust to have some encouraging and satisfactory news to communicate. But you must be aware, gentlemen, how difficult, with small means and no credit, it is to carry on so expensive an undertaking as an alluvial mine, even if it be proved to be really good, with any degree of safety until it is in full working order. With all the money there has been hitherto expended on the mine the main bulk of the ground has yet to be opened up; and if, as I fully anticipate, this deep ground proves good we have a large area of ground to work, for I feel certain we are at the junction of two large main gutters, irrespective of the rich western tributaries. Capt. Anguin (June 10) writes—During the last month the contractors have extended reef drive 100 ft., making a total of 287 ft., another 63 ft. will finish their contract. I have commenced to put a bore up to ascertain the height of the reef; if we get through into wash dirt in 14 or 16 ft. I shall discontinue reef drive, and commence to put up a jump-up, and get into the gutter as soon as possible. If the height of bore should exceed what I have stated the cheapest and best way would be to continue reef drive. I hear that the Lord Malmesbury Company have extended their north drive 1200 ft (they are now in good wash dirt—in fact, it is the best part of the mine), and coming direct from Mr. Ellis's house; if that is the case they are close to the boundary of the Australian Central Gold Mining Company.

ANGLO-AUSTRALIAN (Gold).—Capt. Raisbeck, June 14: We have extended the cross-cut in the 320-ft. level 31 ft.—distance from shaft 194 ft.; at 190 ft. we struck the eastern lode 18 in. thick. I have not seen any gold in the stone, nor have I crushed any of it. As I have remarked previously, this lode is not strong, nor is it considered payable, except where blocks of stone drop into it. It is a channel of ground adjacent to it which is profitably worked on this line of reef. In the Ferrous Reef lease, south of ours, their quartz extends 70 ft. east of this lode. You will see that we are now commencing to prospect this part of our ground, as I do not consider we are prospecting until we are in the channel of ground where we expect gold. Probably you think we have spent a large sum of money in getting to our present workings, but we had no alternative. When commencing operations on the mine our working plan was laid out upon too large a scale for the capital, and, unfortunately, our engine-shafts were placed in wrong positions, our east shaft being too far west for our present depth. The rise in 200-ft. level the contractors has risen 32½ ft. They will hole through to the north drive from the prospecting shaft in about eight days; they have passed through several small leaders of quartz showing gold. The machinery and mine I can report in good working order.

YORKE PENINSULA.—The directors have received advices from the committee of inspection of the company at Adelaide, dated June 17, with reports from the Kurilla Mine to the 12th. The following are extracts from Capt. Anthony's reports: At the 25, east of Hall's shaft, I have suspended driving, and put the men to run up a rise to meet the hauling shaft, with the object of ventilating the drive, the more convenient and economic discharge of stuff, and to facilitate the stoping out of the ore standing between the 25 and 15 levels; the lode in the end is worth 4 tons of from 12 to 15 per cent. of ore per fathom, and in the rise 4 tons of fully 15 per cent. At the 15 east the lode has much improved during the month in its general appearance and yield, although I do not anticipate finding much ore in the back of the drive. . . . Four men continue to stope the back of the 15 east, and have broken about 40 tons of ore. . . . I believe I have stoped up to the top of the yellow ore, and as soon as the excavation is filled and the sides made secure, I shall begin on the green and grey ore above, but what quantity I may expect to find I cannot yet say, as there is solid ground thence to surface. . . . The prospectors have continued to rise in the back of the 15, where the indications of ore are increasing daily, some good stones of ore have already occurred. . . . I still adhere to the advisability of draining this shaft to the 35 without delay. The men at Grainger's shaft are making fair progress in cutting down and timbering. On the new lode I continue to drive the 10 west. The lode is 2 ft. wide, carrying a string of ore on each wall, but not enough to pay. Two men continue to stope the back of the 10 east, and they are breaking a nice pile of ore. I have about 120 tons of ore on the mine, 100 tons of which I had hoped to get ready by the end of the present month, but so much rain has fallen as to render the dressing almost impossible. I shall get it ready then if possible.

SCOTTISH AUSTRALIAN.—The directors have received advices from Sydney, dated June 11, with reports from the Lambton Colliery to June 3. The sales of coal for the month of May amounted to 10,084 tons.

NEW ZEALAND KAPANGA (Gold).—J. Thomas, July 11: Since my last advices the engine-shaft has been sunk and timbered 16 ft.; depth on May 14, 274 ft., June 1, 290 ft., the total depth sunk, leaving 10 ft. to sink to reach the 50. As soon as that depth is reached a fork of some 6 or 7 ft. must be sunk for dropping the lift under the level of the cross-cut, and a plat cut at the mouth of the level for holding and filling stuff. The ground is still good for sinking, but during the past three weeks has been much harder than usual at the engine-shaft end. A few days since a new leader came in the shaft, which brought a little change of ground. The branch is of the same description and character as the leaders met with, and its course and underlie is similar to the old lode; it is from 2 to 3 in. wide, and will dip out of the shaft before we reach the 50. During the first week the water has increased considerably through a soft-jointed stone which accompanies the leader, and also from surface from heavy floods of rain. The machinery and pitwork are all in good order, and every dispatch possible made with the sinking operations. I send by post a sample from the new leader, and a stone from the bottom, to show the character of the country sinking through, with a small section showing the depth of shaft to date.

FOREIGN MINES.

DON PEDRO.—June 30: The ore returned has again been derived from the Canoa and the No. 6 and No. 8 shoots. The general work is of a very low standard, and the small limited number of boxes of boxwork has been derived from No. 8 shoot, below the 30, of which the last four boxes of work were of a very low standard. Operations generally throughout the mine have been continued as usual. The water being drawn from the mine still amounts to 18·94 cubic feet per minute. The sinking-lift will be put to work to-day. We have connected the bye-rods this morning, and as soon as the water is forked down we shall put the sinking-lift to work. The 35 cross-cut is continued as usual—samples very poor. We have opened a drive north of the 35 cross-cut, to drive north on No. 8 shoot. In our explorations nothing has yet been discovered to note.

RICHMOND.—Cablegram from the mine at Eureka, Nevada: Hall, London-Week's run, $55,000.

FRONTINO AND BOLIVIA.—The directors have advices (June 12), accompanied by a remittance of gold valued at 2530*l*. 9s 10d., the produce of the mines, and from gold purchased at the mines, for the month ending May 20. The accounts for the the month show—Produce; 704 ozs. gold dust from 765 tons of mineral; average yield per ton, 18½ dwts.; 359½ ozs. of gold dust purchased from miners on tribute, 2530*l*. 9s. 10d.—Cost: Mine cost at Bolivia, and expenses in London and Medellin, 806*l*. 1s. 4d.; paid for gold dust purchased, 684*l*. 12s.=1490*l*. 13s. 4d.: Profit, 1039*l*. 16s. 6d. In addition to the monthly cost of 806*l*. 1s. 4d., $1792 (376*l*.) has this month been expended on capital account. With the exception of a small quantity of ore taken from the shaft of the Silencio Mine, neither that mine nor the Salada Mine has contributed anything towards this month's remittance. When it is remembered that the Silencio and Salada Mines are, according to Mr. Robt. White's report, the richest which the company possess, and that owing to the dry season having continued during the whole of the month of May, one-third of the existing stamps have been idle for want of water, it appears almost impossible to doubt that the brilliant prospects which have so long and anxiously been expected from the company's property are about to be realised.

ANTIOQUIA (Frontino).—The directors have advices (June 12), accompanied by a remittance of gold, valued at 161*l*. 9s. 5d., the produce of the mines for the month of May last. The accounts show—Mine cost at Frontino, and expenses in London and Medelin, 267*l*. 14s. 4d.—Produce: 57½ ozs. of gold dust from 125 tons of mineral; average yield per ton, 10 dwts., 161*l*. 9s. 5d.: Loss, 106*l*. 4s. 11d.

TECOMA.—J. Barker, July 1: In answer to your question as to the propriety of disposing of the furnaces at Truckee, I am decidedly of the opinion that they are altogether too far from your mines to be profitably worked. At the present time I think it will be found more profitable to sell the ore to the smelters at Salt Lake. They always require ores of the character produced by your mines. Should it at any time be desirable to smelt your own ores, it will be decidedly better to build furnaces in this vicinity. Several applications were made last winter to rent or buy your furnaces. In a few days I will go to Truckee and enquire into this matter, and will do what I deem for the best interest of the company. I will at once report any action I may take to you. I am better satisfied for the future prospects of the mine and of its value the more I see of it, but the work first to be done is the completion of the adit. [Further instructions to push on the adit would reach Mr. Barker shortly after the date of this letter.] The vein still continues narrow. Supplies will be needed for mine this coming month, as follows:—Galvanised pipe, for ventilation, 500 ft.; 100 lbs. 1-inch cast steel; 10 boxes candles; 10 kegs powder; 2000 ft. fuse.

LUSITANIAN.—July 27: Palhal; In Taylor's engine-shaft sinking below the 180 fm. level the lode is 8 ft. wide, composed of quartz, and at times small stones of ore, but nothing to value.—Levels on Basto's Lode: In the 80, west of Taylor's, the lode has improved, and is now worth 1¼ ton of ore per fathom. At the W. west of Taylor's, we are through the slide lode, which has much more quartz in it than in level above, but we cannot see anything of Basto's lode to the west of it up to the present. In the 160 west the lode is 8 in. wide, composed of schist. In the 150, west of slide, the lode is composed of a little quartz and country, with stone containing small quantities of ore. The lode in the 150 east is 3 ft. wide, made up of quartz and stones of ore. At the 110, east of River shaft and south of Basto's lode, we have not met with any more lode as yet. In the 90, east of River shaft, the lode is 2 ft. wide, containing stones of copper and mundic. In the 70 east the lode is 1½ ft. wide, yielding stones of ore. The lode is 5 ft. wide in the 28 east, composed of quartz and soft country, with spots of lead, but not in quantities to value. In the 50, west of Taylor's shaft and west of slide, the lode is very small, with a little quartz in it.—Carvalhal: At the 60 cross-cut, south of incline shaft, we have seen no other branch since we last wrote. The ground is rather hard and dry.

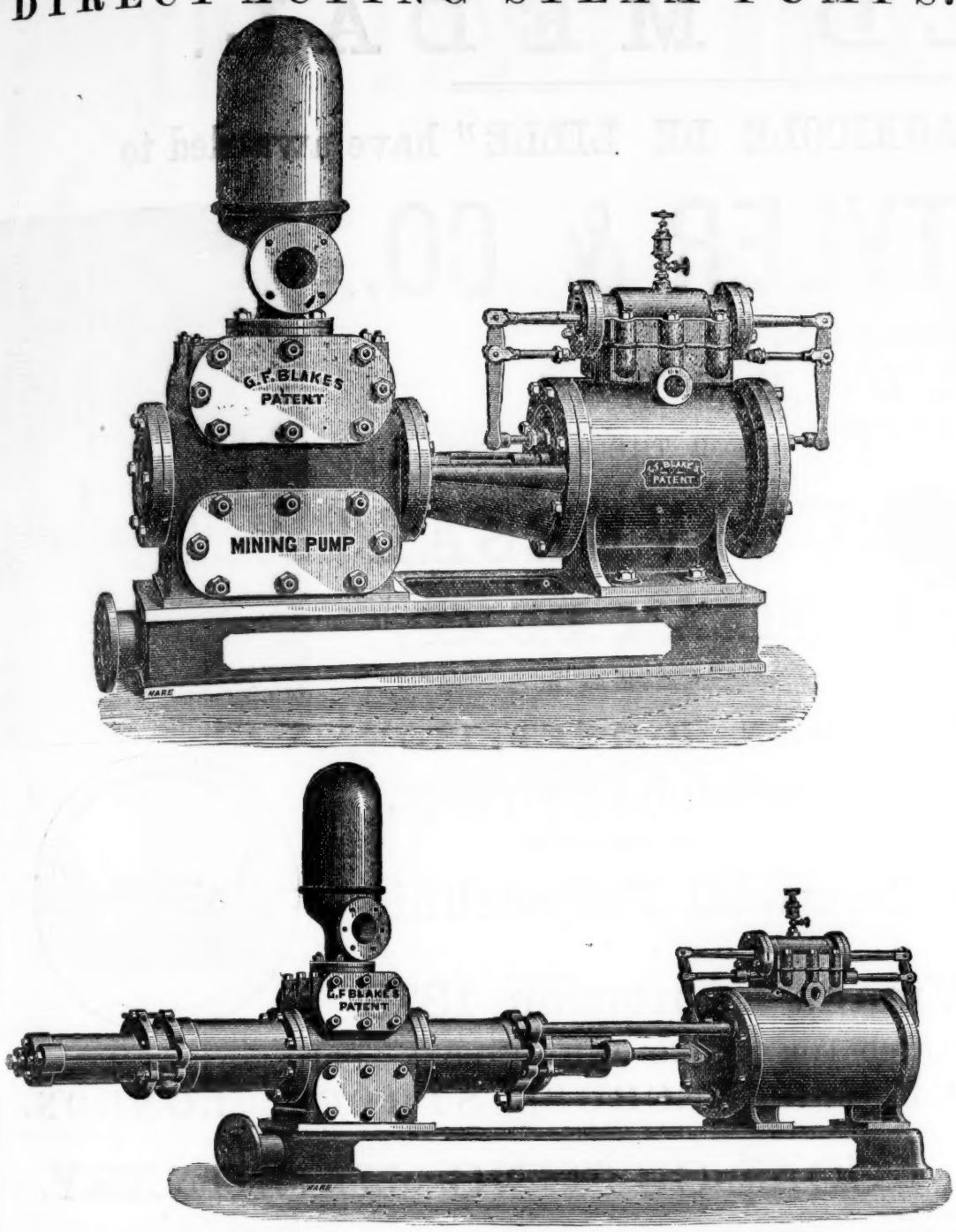
BENSBERG.—Chas. Craze, Aug. 2: Victoria Shaft: In the last month we have completed cutting plat and barrow-road at the 14, and the men have now been sinking about a week. The ground in the shaft is a little jointy, letting out pretty much water, consequently spare for sinking. The part of the lode being carried produces rich stones of ore; there is no doubt the best part is standing to the south, and will fall into the shaft in about 9 ft. more sinking, when I think I shall have the pleasure to report a valuable lode here. In the 14, west of this shaft, we have a strong fine-looking lode, producing for part carried (4 ft. wide) 3 tons of ore, worth 20*l*.; this being west of the workings in open-cast I consider it a very important point; I have, therefore, put six men in the end to open it out as fast as possible.—New Shaft: The stope in the back of the level, west of this shaft, is now finished, having worked up near the surface and to the top of the ore. We are now taking down a piece of lode standing in the north side of this level; it produces 2 tons of ore per fathom, and looks very promising in the bottom. As soon as the Victoria shaft gets down out of the way I shall commence to drive a level east under this ground. The stope in open-cast near new shaft yields good ore for dressing. The stope of carbonate in the west end of open-cast looks much the same as for some time past; it yielded about 18 tons of fair quality ore in the last month. Our machinery throughout the mine is working well. We consumed in July about 75 tons of coal; this I consider a fair quantity for our pumping, dressing, and winding throughout the mine.—Returns for July: Dressed ore, 30 tons, 44 per cent., and 18 tons carbonate; total, 48 tons

MENZENBERG.—Aug. 4: Dickins's Engine-shaft: The rock in the end of the 45 fm. cross-cut, which is driven 34 fathoms west of shaft, consists of a beautiful clay-slate or killas, mixed with grauwacke. The appearance of the latter is a most favourable feature, as its character is identical with that of the adjoining mine, and before meeting with the great St. Josephberg lode in that mine this rock has invariably made its appearance, which is a good indication, and at and about it the lode has been found very productive. In the level east of the 45 fm. cross-cut the lode is 3½ ft. wide, and is yielding stones of copper ore. In about 2½ fathoms driving we expect to cut the north and south lode met with in the south cross-cut. I am pleased to say we have erected the air machine, which is worked by the engine, and it is working admirably. We have also fixed air-pipes from the surface to the 45 fm. level, which greatly facilitates our working.

MALABAR.—G. B. O'Reilly, June 19: It is quite evident that the high hopes we are at present washing is very poor in gold. The same has, I believe, happened at Malpaso, and there they are now directing their operations towards another and a more productive side of the mine. We shall take another short run from our high bank to further prospect it to the north, opening out to the east, at the same time, towards the small Quebrada. Our monitors are now moving on square N. 25. A large portion of the ridge on lines 24, 25, 26, 27 has been run off during our past run and the present short one we are putting in. The bank is fully 100 ft. high, with some 8 ft. of pretty hard pipe-clay two-thirds of the way up. This pipe-clay was a most disagreeable surprise to us. It was nowhere visible, either on the edges or on the front of the hill; and it developed itself gradually into its present dimensions as we piped into the ridge. The consequence is that we are much delayed in washing, 10 hours piping being sufficient to bring down pipe clay enough for 15 hours picking with our limited force. The bottom pipe-clay remains about the same, with a very gradual rise and dipping down to the east; in this bottom pipe-clay (through which the bed rock appears in many places) we have to keep our ground sluice picked down, and in some places are obliged to blast it, where hard bands of rock intersect it. You will perceive by what I have stated that our work is not by any means easy or satisfactory. If the gravel was as good as in Malpaso we would in spite of these obstacles do very well, but such is not the case, and we must now alter our plans to some degree, so that we may clear up the character of the ground on all sides of the mine, and also see whether we had anything that will prove satisfactory. Our plan, after very careful consideration, will be more or less as follows:—The monitors will be placed on square 0·24 piping directly east, to open into high ground in that direction. The small Quebrada will wear down as a ground sluice, and will discharge into our main ground sluice through a cut which was started some months ago, when were still undecided which side of the hill was the most advantageous for advancing on. By measurements we find that our cut will come in some 15 or 20 ft. deeper than we have yet been able to get; and, as the ground is much deeper also on this side, and apparently much richer, we may do better, perhaps, than we expect. Anyhow, under present circumstances this is the best and most promising portion of the ground, and the channel, if any channel exists, must be looked for in this direction. The gravel in the hill, R.S. 16·77, was very fair, and has given us the best results we have hitherto obtained, and this main character of gravel must continue, in all probability, to the east.

[For remainder of Foreign Mines, see to-day's Journal.]

DIRECT-ACTING STEAM PUMPS.



DIRECT-ACTING STEAM-PUMPS.

THE BLAKE PUMP.

Among the multiplicity of simple Direct-acting Steam-Pumps introduced into this country, most of which have acquired a large sale, and are still increasing in favour with the mining community. None are deserving of a better reputation than the Blake pump, which has acquired an extensive sale in America, where it is being used in a variety of ways, and was selected by the Chief Engineer of the United States Navy for special experiment on board the Tennessee. The report submitted is very interesting and valuable as showing its peculiar adaptation as a marine circulating pump. As a mining pump it possesses several advantages not realised by many now before the public, not least of which are its compact form and great strength, it will start at any part of the stroke, has no dead point, and works fast or slow with the same certainty of action; in fact, the certainty of its action under the most disadvantageous circumstances is a merit which will commend itself to all users of this class of machinery, it works steady, solid, and is always reliable; when put to the severest tests it never fails in showing the superiority of working details and accuracy of finish; it can be relied on to work at any speed—one stroke in 12 minutes, or 200 strokes per minute—and will continue to work against a head pressure with certainty, thereby keeping it at a steady and uniform height. Such reliability in the Blake pump will be understood by colliery engineers, and will cause it rapidly to grow into favour for high lifts; they are employed in the workings of the most intricate collieries, forcing perpendicularly to great heights, thence through long ranges of pipes laid horizontally traversing the workings, and again through another high lift sometimes reaching a total height of 1500 ft.; this practical system is coming into use rapidly, and no doubt will ultimately command universal adaptation; it dispenses with cumbersome rods, which are troublesome, and often give rise to accidents and delays; it requires no costly engine-house or massive foundations, the complication of pitwork is avoided, and a clear shaft for hauling is obtained.

This system being well established in the coal mining districts, there is no reason why it should not be partially employed in Cornwall, especially in new trial mines; for foreign mines, where economy, convenience of transit, and reduction of freights are important, the Blake pump will be admirably adapted. By an ingenious contrivance of hinged bolts the valve-box cover can be quickly removed, admitting of the whole of the valves being taken out and put together again with the greatest ease, the time occupied during experiments recently tried was under two minutes. The steam-valve is a special feature in the pump, and combines all the necessary conditions that should be found in a direct-acting steam-pump—simplicity, durability, and positive action. It will also compensate for wear, and the several parts interchange and fit. It is a common slide valve, understood by and familiar to every ordinary working engineer; when necessary it can be re-seated without being taken into the workshops, and is arranged to run under either high or low pressures, working as perfectly when the exhaust is connected with a condenser as when exhausting into the atmosphere. It does not depend upon the elasticity of steam to work it, consequently these pumps can be operated with absolute certainty by water-pressure, thus enabling them to start when filled with the cold water of condensation.

Another important feature is the valve motion, by the use of which the pump takes a very compact form, and consequently ensures strength and power, requiring very little floor space; this short connection reduces the speed of the slide valve, thus enabling the pump to be run at the highest speed without thumping. Its action is certain at all speeds, and let the pressure be at any height the pump may run in fork without the piston striking the ends of the cylinder. This is a most severe test. A pump 36-in. stroke is but 9 in. between the steam and water cylinders, the ordinary motion being about 46 in.; this short connection enables the pump to do very heavy work. It requires no bed plate, for the heaviest or lighest duty it stands equally rigid, the patent valve motion bringing the two cylinders in such close proximity that vibration and lost motion is reduced to a minimum.

The water valves are of the most ingenious yet simple description, and will work and keep tight whilst there is any of the seat left, and being made of different materials will suit all requirements whether for pumping water strongly impregnated with mineral salts, for pumping acids, tar, or ammoniacal liquors, &c. For pumping gritty or sandy water the double-plunger pattern is mostly used, and finds considerable favour with the quartz miners of California. At Angel's Quartz Mine this type of pump has been running with perfect success for a number of years, raising water of the grittiest kind from some 500 ft. deep. They are extensively used in the coal and iron fields of Pennsylvania, New York, and in the mining districts of the United States.

Prominent features in this pattern pump are that the piston-rods do not enter the water cylinder, the suction-valves are below the cylinder, and the delivery-valves above, and can be handled with great facility. The whole of the working parts are easy of access and interchangeable, best gun-metal being used in all parts liable to be cut away by mineral water. This class or pump is rapidly superseding centrifugal machinery, requiring some 35 per cent. less power. If used in conjunction with a condenser there will be a saving of fuel and preservation of the boiler, and the economy and efficiency of the pump greatly increased, a vacuum is obtained, and the waste steam utilised and prevented from blowing-off to the discomfort of the workmen, no mean desideratum in the case of mines.

The engravings, as above, will clearly illustrate the different types of pump. Knowing the progress it has made in America we augur for it a great success in this country. We shall illustrate the working of the steam-valves in our next issue.

PRODUCING INSCRIPTION PLATES.—According to the ordinary method of producing plates of this description, the numbers or letters are usually sunk or incised by hand below the surface of the plate, the cavities being afterwards filled up with black, red, or other wax, or like resinoid matetial, by which the inscription becomes apparent and legible. The invention of Mr. ROBT. MALLET, of Westminster, has for its object cheapening the production of such plates, and consequently extending the demand for them by the substitution of mechanical means for the skilled labour of the engraver. For this purpose he proposes to cast such inscribed plates with the sunken characters already sunk beneath the general surface of the plate, so that the sunken parts have simply to be subsequently filled up level with the wax, or like material, and the surface of the plate polished off as in the ordinary manner. In carrying out the invention he employs a peculiar process for moulding and casting, combined with certain mechanical arrangements for readily and perfectly forming the mould for the cavities forming the letters or devices in or on the plates, together with certain other apparatus for rapidly changing the model from which numerals or marks are to be moulded.

MANUFACTURE OF PHOSPHATE OF IRON, AND EXTRACTION OF PHOSPHORUS.—Phosphate of lime is, according to the invention of Messrs. BOX, AUBERTIM, BOBLIQUE, and LEPLAY, dissolved in hydrochloric or other acid, and oxide of iron is also dissolved in similar acid, the two solutions thus prepared are mixed, the insoluble matter from each is removed, and the excess of acid saturated with cabonate of lime, a precipitate of phosphate of iron is formed, which is employed in the manufacture of ammoniacal salts. The invention also relates to the preparation of alkaline phosphates by a wet and dry process.

IMPROVED GAS OR CALORIC ENGINE.—The invention of Mr. PEDRO VERA, of Bayswater, consists of a process and apparatus for generating heat and motion, by causing the explosion of a mixture of hydrogen and oxygen gases in the proportions for forming water, and utilising the heat generated, thereby to convert the water so formed into steam, also to heat air to a high temperature with the steam produced in order to serve as a motor like steam serves, and also utilising the electricity generated by the oxygenation of the hydrogen for decomposing water to obtain hydrogen and oxygen gases to add to the supply of gases for the same machine.

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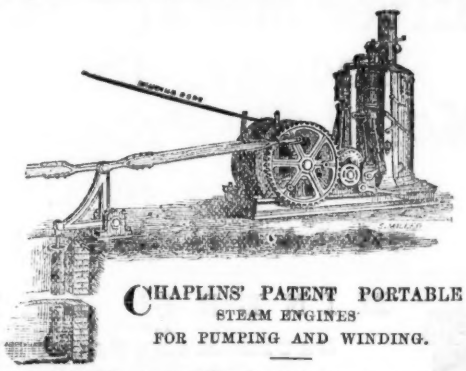

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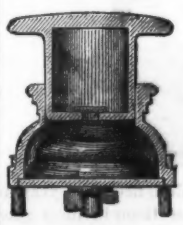

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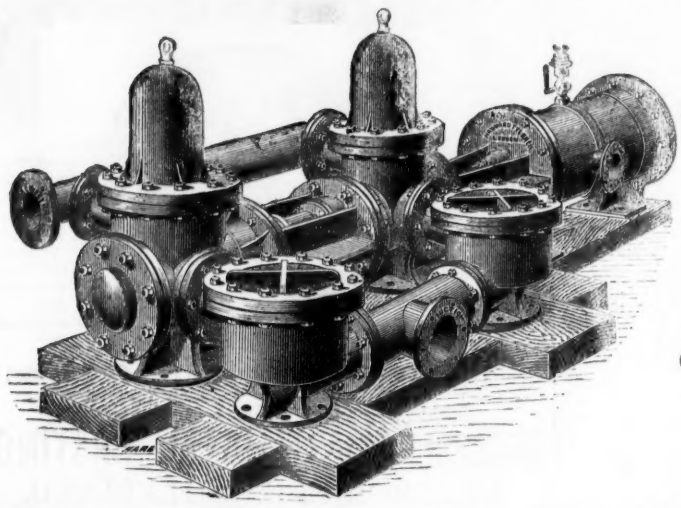

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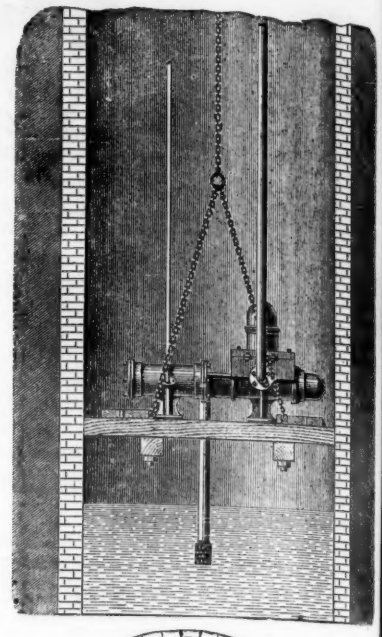

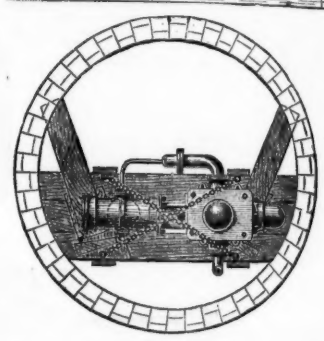

Silver Medal: Royal Cornwall Polytechnic Society, 1872.

Medal for Progress: Vienna Exhibition, 1873.

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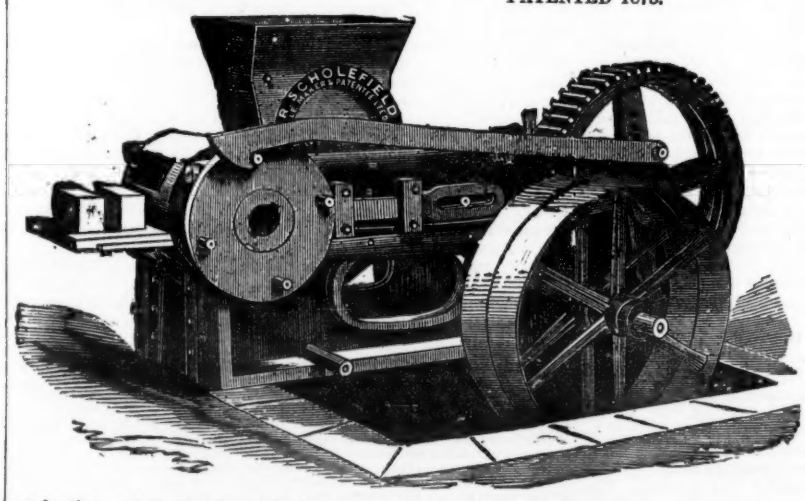

R. S. begs to call the attention of all Colliery Owners in particular to his PATENT SEMI-DRY BRICK MACHINE, and the economical method of making bricks by his patent machinery from the refuse that is taken from the pits during the process of coal-getting, which, instead of storing at the pit's mouth (and making acres of valuable land useless), is at once made into bricks at a very small cost, by R. S.'s Patent Brick-making Machinery. If the material is got from the pit hill, the following is about the cost of production, and the hands required to make 10,000 pressed bricks per day:—

2 men digging, each 4s. per day	£0 8 0
1 man grinding, 4s. 6d. per day	0 4 6
1 boy taking off bricks from machine, and placing them in barrow ready for the kiln, 2s. per day	0 2 0
1 boy greasing, 1s. 6d. per day	0 1 6
1 engine-man, 5s. per day	0 5 0
1 man wheeling bricks from machine to kiln, 4s. per day	0 4 0
Total cost of making 10,000 pressed bricks	£1 5 0, or 2s. 6d. per 1000.

(SETTING AND BURNING SAME PRICE AS HAND-MADE BRICKS.)

N.B.—Where the material can be used as it comes from the pit, the cost will be reduced in digging.

As the above Machinery is particularly adapted for the using up of shale, bind, &c., it will be to the advantage of all Colliery Owners to adopt the use of the said Brick-making Machinery.

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I hereby certify that the new Rock Drill of C. Levet's System has worked at the Blanzy Mines since Nov. 20 without there being the slightest necessity for repair. Its results up to this date have been superior to the other Rock Drills employed in the said mines.

(Signed)

THE ENGINEER OF THE MINES, POUMAIREAU.

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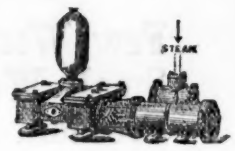
(Signed) HILL, GARTON, AND CO.



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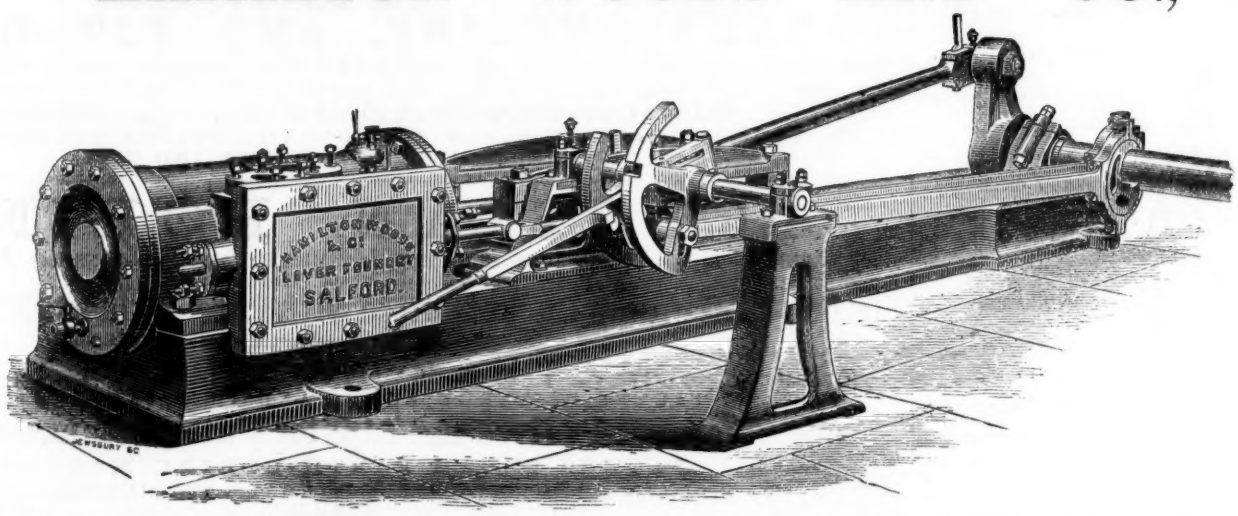

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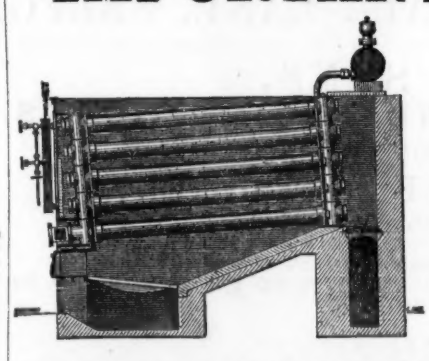

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